

SEQUENCE LISTING

<110> Funahashi, Shin-ichi
Miyata, Shoji

<120> PROTEIN HAVING PDZ DOMAIN SEQUENCE

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<140> US 09/502,698

<141> 2000-02-11

<150> PCT/JP98/03603

<151> 1998-08-12

<150> JP 10/189944

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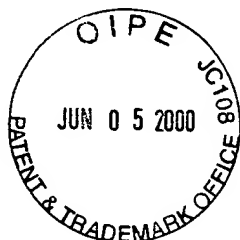
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Pro	Leu	Ser	Gly	Ser	Ser	Thr	Ser	Glu	Ser	Leu	Glu	Ser	Ser	Ser	Lys	1140	1145	1150
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Thr	Gly	Val	Ala	Ala	Gln	Thr	Gln	Lys	Leu	Arg	Val	Gly	Asp	Arg	Ile	1205	1210	1215
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 1315 1320 1325
 Ser Glu Asp Gly Arg Leu Lys Arg Gly Asp Gln Ile Ile Ala Val Asn
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 Arg Asp Gly Arg Ile Ala Ile Gly Asp Cys Ile Leu Ser Ile Asn Glu
 50 55 60
 Glu Ser Thr Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg
 65 70 75 80
 Arg His Ser Leu Ile Gly Pro Asp Ile Lys Ile Thr Tyr Val Pro Ala
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 Glu His Leu Glu Glu Phe Lys Ile Ser Leu Gly Gln Gln Ser Gly Arg
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 Val Met Ala Leu Asp Ile Phe Ser Ser Tyr Thr Gly Arg Asp Ile Pro
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 Arg Glu Pro Ser Lys Ser Leu Gly Ile Ser Ile Val Gly Gly Arg Gly
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 Lys His Val Leu Glu Asp Ser Pro Ala Gly Lys Asn Gly Thr Leu Lys
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Ala	Gly	Lys	Asp	Gly	Arg	Leu	Gln	Ile	Ala	Asp	Glu	Leu	Leu	Glu	Ile	325	330	335
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Leu	Pro	Ser	Asn	Ser	Glu	Asn	Leu	Gln	Asn	Lys	Glu	Thr	Glu	Pro	Thr	385	390	395
Val	Thr	Thr	Ser	Asp	Ala	Ala	Val	Asp	Leu	Ser	Ser	Phe	Lys	Asn	Val	405	410	415
Gln	His	Leu	Glu	Leu	Pro	Lys	Asp	Gln	Gly	Gly	Leu	Gly	Ile	Ala	Ile	420	425	430
Ser	Glu	Glu	Asp	Thr	Leu	Ser	Gly	Val	Ile	Ile	Lys	Ser	Leu	Thr	Glu	435	440	445
His	Gly	Val	Ala	Ala	Thr	Asp	Gly	Arg	Leu	Lys	Val	Gly	Asp	Gln	Ile	450	455	460
Leu	Ala	Val	Asp	Asp	Glu	Ile	Val	Val	Gly	Tyr	Pro	Ile	Glu	Lys	Phe	465	470	475
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Gly	Asp	Gln	Ile	Leu	Glu	Val	Asn	Gly	Ile	Asp	Leu	Arg	Lys	Ala	Thr	610	615	620
His	Asp	Glu	Ala	Ile	Asn	Val	Leu	Arg	Gln	Thr	Pro	Gln	Arg	Val	Arg	625	630	635
Leu	Thr	Leu	Tyr	Arg	Asp	Glu	Ala	Pro	Tyr	Lys	Glu	Glu	Glu	Val	Cys	645	650	655
Asp	Thr	Leu	Thr	Ile	Glu	Leu	Gln	Lys	Lys	Pro	Gly	Lys	Gly	Leu	Gly	660	665	670
Leu	Ser	Ile	Val	Gly	Lys	Arg	Asn	Asp	Thr	Gly	Val	Phe	Val	Ser	Asp	675	680	685
Ile	Val	Lys	Gly	Gly	Ile	Ala	Asp	Pro	Asp	Gly	Arg	Leu	Ile	Gln	Gly	690	695	700
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Glu	Ala	Val	Ala	Ala	Leu	Leu	Lys	Cys	Ser	Leu	Gly	Thr	Val	Thr	Leu	725	730	735
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Ser	Gln	Thr	Ser	Gln	Val	Ser	Glu	Gly	Ser	Leu	Ser	Ser	Phe	Thr	Phe	755	760	765
Pro	Leu	Ser	Gly	Ser	Ser	Thr	Ser	Glu	Ser	Leu	Glu	Ser	Ser	Ser	Lys	770	775	780

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 Lys Lys Gly Pro Thr Asp Ser Leu Gly Ile Ser Ile Ala Gly Gly Val
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 Pro Asp Gly Leu Gly Phe Ser Ile Val Gly Gly Tyr Gly Ser Pro His
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 Gly Asp Leu Pro Ile Tyr Val Lys Thr Val Phe Ala Lys Gly Ala Ala
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 Met Val
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 Cys Cys Arg Arg Thr Val Pro Pro Thr Thr Gln Ser Glu Leu Asp Ser
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ctg gac tta tgt gat att gag cta aca gaa aag cct cac gta gat cta 393
 Leu Asp Leu Cys Asp Ile Glu Leu Thr Glu Lys Pro His Val Asp Leu
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Gly Leu Asn Tyr Gly Ser Ser Leu Pro Ser Ser Pro Pro Lys Asp Val	
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ctg ctt gaa cag agc tcc ctg gcc tgt aat gct gag tgt gtc atg ctt Leu Leu Glu Gln Ser Leu Ala Cys Asn Ala Glu Cys Val Met Leu 355 360 365 370	1401
caa aat gta tct aaa gaa tct ttt gaa agg act att aat ata gca aaa Gln Asn Val Ser Lys Glu Ser Phe Glu Arg Thr Ile Asn Ile Ala Lys 375 380 385	1449
ggc aat tct agc cta gga atg aca gtt agt gct aat aaa gat ggc ttg Gly Asn Ser Ser Leu Gly Met Thr Val Ser Ala Asn Lys Asp Gly Leu 390 395 400	1497
ggg atg atc gtt cga agc att att cat gga ggt gcc att agt cga gat Gly Met Ile Val Arg Ser Ile Ile His Gly Gly Ala Ile Ser Arg Asp 405 410 415	1545
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acc atc agt gta acc aat gcc cag gca cga gct atg ttg aga aga cat Thr Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His 435 440 445 450	1641
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gca ctg gat att ttt tct tca tac act ggc aga gac att cca gaa tta Ala Leu Asp Ile Phe Ser Ser Tyr Thr Gly Arg Asp Ile Pro Glu Leu 485 490 495	1785
cca gag cga gaa gag gga gag ggt gaa gaa agc gaa ctt caa aac aca Pro Glu Arg Glu Glu Gly Glu Gly Glu Glu Ser Glu Leu Gln Asn Thr 500 505 510	1833
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agt cgg cta agc aat gga gaa gtg atg agg ggc att ttc atc aaa cat	1977
Ser Arg Leu Ser Asn Gly Glu Val Met Arg Gly Ile Phe Ile Lys His	
550 555 560	
gtt ctg gaa gat agt cca gct ggc aaa aat gga acc ttg aaa cct gga	2025
Val Leu Glu Asp Ser Pro Ala Gly Lys Asn Gly Thr Leu Lys Pro Gly	
565 570 575	
gat aga atc gta gag gca ccc agt cag tca gag tca gag cca gag aag	2073
Asp Arg Ile Val Glu Ala Pro Ser Gln Ser Glu Ser Glu Pro Glu Lys	
580 585 590	
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Ala Pro Leu Cys Ser Val Pro Pro Pro Pro Ser Ala Phe Ala Glu	
595 600 605 610	
atg ggt agt gat cac aca cag tca tct gca agc aaa atc tca caa gat	2169
Met Gly Ser Asp His Thr Gln Ser Ser Ala Ser Lys Ile Ser Gln Asp	
615 620 625	
gtg gac aaa gag gat gag ttt ggt tac agc tgg aaa aat atc aga gag	2217
Val Asp Lys Glu Asp Glu Phe Gly Tyr Ser Trp Lys Asn Ile Arg Glu	
630 635 640	
cgt tat gga acc cta aca ggc gag ctg cat atg att gaa ctg gag aaa	2265
Arg Tyr Gly Thr Leu Thr Gly Glu Leu His Met Ile Glu Leu Glu Lys	
645 650 655	
ggt cat agt ggt ttg ggc cta agt ctt gct ggg aac aaa gac cga tcc	2313
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agg atg agt gtc ttc ata gtg ggg att gat cca aat gga gct gca gga	2361
Arg Met Ser Val Phe Ile Val Gly Ile Asp Pro Asn Gly Ala Ala Gly	
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Lys Asp Gly Arg Leu Gln Ile Ala Asp Glu Leu Leu Glu Ile Asn Gly	
695 700 705	
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Gln Ile Leu Tyr Gly Arg Ser His Gln Asn Ala Ser Ser Ile Ile Lys	
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Cys Ala Pro Ser Lys Val Lys Ile Ile Phe Ile Arg Asn Lys Asp Ala	
725 730 735	
gtg aat cag atg gcc gta tgt cct gga aat gca gta gaa cct ttg cct	2553
Val Asn Gln Met Ala Val Cys Pro Gly Asn Ala Val Glu Pro Leu Pro	
740 745 750	
tct aac tca gaa aat ctt caa aat aag gag aca gag cca act gtt act	2601
Ser Asn Ser Glu Asn Leu Gln Asn Lys Glu Thr Glu Pro Thr Val Thr	
755 760 765 770	
act tct gat gca gct gtg gac ctc agt tca ttt aaa aat gtg caa cat	2649
Thr Ser Asp Ala Val Asp Leu Ser Ser Phe Lys Asn Val Gln His	
775 780 785	

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gta gca gcc acg gat gga cga ctc aaa gtc gga gat cag ata ctg gct Val Ala Ala Thr Asp Gly Arg Leu Lys Val Gly Asp Gln Ile Leu Ala 820 825 830	2793
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ctc act att gag ctg cag aag aag ccg gga aaa ggc cta gga tta agt Leu Thr Ile Glu Leu Gln Lys Lys Pro Gly Lys Gly Leu Gly Leu Ser 1030 1035 1040	3417
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cca ctt ggt gat gtg cct ata ttt att gca atg atg cac cca act gga Pro Leu Gly Asp Val Pro Ile Phe Ile Ala Met Met His Pro Thr Gly 1190 1195 1200	3897
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agt ctt tct ttc act ggg ctg acg tca acc agt ata ttt cag gat gat 4137
Ser Leu Ser Phe Thr Gly Leu Thr Ser Thr Ser Ile Phe Gln Asp Asp
1270 1275 1280

tta gga cct cct caa tgt aag tct att aca cta gag cga gga cca gat 4185
Leu Gly Pro Pro Gln Cys Lys Ser Ile Thr Leu Glu Arg Gly Pro Asp
1285 1290 1295

ggc tta ggc ttc agt ata gtt gga gga tat ggc agc cct cat gga gac 4233
Gly Leu Gly Phe Ser Ile Val Gly Gly Tyr Gly Ser Pro His Gly Asp
1300 1305 1310

tta ccc att tat gtt aaa aca gtg ttt gca aag gga gca gcc tct gaa 4281
Leu Pro Ile Tyr Val Lys Thr Val Phe Ala Lys Gly Ala Ala Ser Glu
1315 1320 1325 1330

gac gga cgt ctg aaa agg ggc gat cag atc att gct gtc aat ggg cag 4329
Asp Gly Arg Leu Lys Arg Gly Asp Gln Ile Ile Ala Val Asn Gly Gln
1335 1340 1345

agt cta gaa gga gtc acc cat gaa gaa gct gtt gcc atc ctt aaa cgg 4377
Ser Leu Glu Gly Val Thr His Glu Glu Ala Val Ala Ile Leu Lys Arg
1350 1355 1360

aca aaa ggc act gtc act ttg atg gtt ctc tct tgaattggct gccagaattg 4430
Thr Lys Gly Thr Val Thr Leu Met Val Leu Ser
1365 1370

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35 40 45
Arg Leu Leu Pro Gly Asp Arg Leu Met Phe Val Asn Asp Val Asn Leu
50 55 60
Glu Asn Ser Ser Leu Glu Gly Ala Val Glu Ala Leu Lys Gly Ala Pro
65 70 75 80
Ser Gly Thr Val Arg Ile Gly Val Ala Lys
85 90

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 20 25 30
 Gly Met Ile Val Arg Ser Ile Ile His Gly Gly Ala Ile Ser Arg Asp
 35 40 45
 Gly Arg Ile Ala Ile Gly Asp Cys Ile Leu Ser Ile Asn Glu Glu Ser
 50 55 60
 Thr Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His
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 Ser Leu Ile Gly Pro Asp Ile Lys Ile Thr Tyr
 85 90

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 20 25 30
 Gly Glu Val Met Arg Gly Ile Phe Ile Lys His Val Leu Glu Asp Ser
 35 40 45
 Pro Ala Gly Lys Asn Gly Thr Leu Lys Pro Gly Asp Arg Ile Val Glu
 50 55 60
 Ala Pro Ser Gln Ser Glu Ser Glu Pro Glu Lys Ala Pro Leu Cys Ser
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 20 25 30
 Val Gly Ile Asp Pro Asn Gly Ala Ala Gly Lys Asp Gly Arg Leu Gln
 35 40 45
 Ile Ala Asp Glu Leu Leu Glu Ile Asn Gly Gln Ile Leu Tyr Gly Arg
 50 55 60
 Ser His Gln Asn Ala Ser Ser Ile Ile Lys Cys Ala Pro Ser Lys Val
 65 70 75 80
 Lys Ile Ile Phe Ile Arg
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 20 25 30

Leu Thr Glu His Gly Val Ala Ala Thr Asp Gly Arg Leu Lys Val Gly
 35 40 45
 Asp Gln Ile Leu Ala Val Asp Asp Glu Ile Val Val Gly Tyr Pro Ile
 50 55 60
 Glu Lys Phe Ile Ser Leu Leu Lys Thr Ala Lys Met Thr Val Lys Leu
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 Thr Ile His Ala

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 20 25 30
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 35 40 45
 Ala Gly Asp Gln Ile Leu Glu Val Asn Gly Ile Asp Leu Arg Lys Ala
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 Thr His Asp Glu Ala Ile Asn Val Leu Arg Gln Thr Pro Gln Arg Val
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 Arg Leu Thr Leu Tyr Arg
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 20 25 30
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 35 40 45
 Gly Asp Gln Ile Leu Leu Val Asn Gly Glu Asp Val Arg Asn Ala Ser
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 35 40 45
 Lys Leu Arg Val Gly Asp Arg Ile Val Thr Ile Cys Gly Thr Ser Thr
 50 55 60

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Gln Gly Met Thr His Thr Gln Ala Val Asn Leu Leu Lys Asn Ala Ser
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35 40 45
Leu Lys Arg Gly Asp Gln Ile Ile Ala Val Asn Gly Gln Ser Leu Glu
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 Met Gly Ser Asn
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 His Thr Gln Ser Ser Ala Ser Lys Ile Ser Gln Asp Val Asp Lys Glu
 5 10 15 20

 gat gag ttt ggt tac agc tgg aaa aat atc aga gag cgt tat gga acc 150
 Asp Glu Phe Gly Tyr Ser Trp Lys Asn Ile Arg Glu Arg Tyr Gly Thr
 25 30 35

 cta aca ggc gag ctg cat atg att gaa ctg gag aaa ggt cat agt ggt 198
 Leu Thr Gly Glu Leu His Met Ile Glu Leu Glu Lys Gly His Ser Gly
 40 45 50

ttg ggc cta agt ctt gct ggg aac aaa gac cga tcc agg atg agt gtc Leu Gly Leu Ser Leu Ala Gly Asn Lys Asp Arg Ser Arg Met Ser Val 55 60 65	246
ttc ata gtg ggg att gat cca aat gga gct gca gga aaa gat ggt cga Phe Ile Val Gly Ile Asp Pro Asn Gly Ala Ala Gly Lys Asp Gly Arg 70 75 80	294
ttg caa att gca gat gag ctt cta gag atc aat ggt cag att tta tat Leu Gln Ile Ala Asp Glu Leu Leu Glu Ile Asn Gly Gln Ile Leu Tyr 85 90 95 100	342
gga aga agt cat cag aat gcc tca tca atc att aaa tgt gcc cct tct Gly Arg Ser His Gln Asn Ala Ser Ser Ile Ile Lys Cys Ala Pro Ser 105 110 115	390
aaa gtg aaa ata att ttt atc aga aat aaa gat gca gtg aat cag atg Lys Val Lys Ile Ile Phe Ile Arg Asn Lys Asp Ala Val Asn Gln Met 120 125 130	438
gcc gta tgt cct gga aat gca gta gaa cct ttg cct tct aac tca gaa Ala Val Cys Pro Gly Asn Ala Val Glu Pro Leu Pro Ser Asn Ser Glu 135 140 145	486
aat ctt caa aat aag gag cca gag cca act gtt act act tct gat gca Asn Leu Gln Asn Lys Glu Pro Glu Pro Thr Val Thr Thr Ser Asp Ala 150 155 160	534
gct gtg gac ctc agt tca ttt aaa aat gtg caa cat ctg gag ctt ccc Ala Val Asp Leu Ser Ser Phe Lys Asn Val Gln His Leu Glu Leu Pro 165 170 175 180	582
aag gat cag ggg ggt ttg ggt att gct atc agc gaa gaa gat aca ctc Lys Asp Gln Gly Gly Leu Gly Ile Ala Ile Ser Glu Glu Asp Thr Leu 185 190 195	630
agt gga gtc atc ata aag agc tta aca gag cat ggg gta gca gcc acg Ser Gly Val Ile Ile Lys Ser Leu Thr Glu His Gly Val Ala Ala Thr 200 205 210	678
gat gga cga ctc aaa gtc gga gat cag ata ctg gct gta gat gat gaa Asp Gly Arg Leu Lys Val Gly Asp Gln Ile Leu Ala Val Asp Asp Glu 215 220 225	726
att gtt gtt ggt tac cct att gaa aag ttt att agc ctt ctg aag aca Ile Val Val Gly Tyr Pro Ile Glu Lys Phe Ile Ser Leu Leu Lys Thr 230 235 240	774
gca aag atg aca gta aaa ctt acc atc cat gct gag aat cca gat tcc Ala Lys Met Thr Val Lys Leu Thr Ile His Ala Glu Asn Pro Asp Ser 245 250 255 260	822
cag gct gtt cct tca gca gct ggt gca gcc agt gga gaa aaa aag aac Gln Ala Val Pro Ser Ala Ala Gly Ala Ala Ser Gly Glu Lys Lys Asn 265 270 275	870
agc tcc cag tct ctg atg gtc cca cag tct ggc tcc cca gaa ccg gag Ser Ser Gln Ser Leu Met Val Pro Gln Ser Gly Ser Pro Glu Pro Glu 280 285 290	918

tcc atc cga aat aca agc aga tca tca aca cca gca att ttt gct tct	966
Ser Ile Arg Asn Thr Ser Arg Ser Ser Thr Pro Ala Ile Phe Ala Ser	
295 300 305	
gat cct gca acc tgc ccc att atc cct ggc tgc gaa aca acc atc gag	1014
Asp Pro Ala Thr Cys Pro Ile Ile Pro Gly Cys Glu Thr Thr Ile Glu	
310 315 320	
att tcc aaa ggg cga aca ggg ctg ggc ctg agc atc gtt ggg ggt tca	1062
Ile Ser Lys Gly Arg Thr Gly Leu Gly Leu Ser Ile Val Gly Gly Ser	
325 330 335 340	
gac acg ctg ctg ggt gcc ttt att atc cat gaa gtt tat gaa gaa gga	1110
Asp Thr Leu Leu Gly Ala Phe Ile Ile His Glu Val Tyr Glu Glu Gly	
345 350 355	
gca gca tgt aaa gat gga aga ctc tgg gct gga gat cag atc tta gag	1158
Ala Ala Cys Lys Asp Gly Arg Leu Trp Ala Gly Asp Gln Ile Leu Glu	
360 365 370	
gtg aat gga att gac ttg agg aag gcc aca cat gat gaa gca atc aat	1206
Val Asn Gly Ile Asp Leu Arg Lys Ala Thr His Asp Glu Ala Ile Asn	
375 380 385	
gtc ctg aga cag acg cca cag aga gtg cgc ctg aca ctc tac aga gat	1254
Val Leu Arg Gln Thr Pro Gln Arg Val Arg Leu Thr Leu Tyr Arg Asp	
390 395 400	
gag gcc cca tac aaa gag gag gaa gtg tgt gac acc ctc act att gag	1302
Glu Ala Pro Tyr Lys Glu Glu Glu Val Cys Asp Thr Leu Thr Ile Glu	
405 410 415 420	
ctg cag aag aag ccg gga aaa ggc cta gga tta agt att gtt ggt aaa	1350
Leu Gln Lys Lys Pro Gly Lys Gly Leu Gly Leu Ser Ile Val Gly Lys	
425 430 435	
aga aac gat act gga gta ttt gtg tca gac att gtc aaa gga gga att	1398
Arg Asn Asp Thr Gly Val Phe Val Ser Asp Ile Val Lys Gly Gly Ile	
440 445 450	
gca gat ccc gat gga aga ctg atc cag gga gac cag ata tta ttg gtg	1446
Ala Asp Pro Asp Gly Arg Leu Ile Gln Gly Asp Gln Ile Leu Leu Val	
455 460 465	
aat ggg gaa gac gtt cgt aat gcc tcc caa gaa gcg gtt gcc gct ttg	1494
Asn Gly Glu Asp Val Arg Asn Ala Ser Gln Glu Ala Val Ala Ala Leu	
470 475 480	
cta aag tgt tcc cta ggc aca gta acc ttg gaa gtt gga aga atc aaa	1542
Leu Lys Cys Ser Leu Gly Thr Val Thr Leu Glu Val Gly Arg Ile Lys	
485 490 495 500	
gct ggt cca ttc cat tca gag agg agg cca tct caa acc agc cag gtg	1590
Ala Gly Pro Phe His Ser Glu Arg Arg Pro Ser Gln Thr Ser Gln Val	
505 510 515	
agt gaa ggc agc ctg tct tct ttc act ttt cca ctc tct gga tcc agt	1638
Ser Glu Gly Ser Leu Ser Ser Phe Thr Phe Pro Leu Ser Gly Ser Ser	
520 525 530	

aca tct gag tca ctg gaa agt agc tca aag aag aat gca ttg gca tct	1686
Thr Ser Glu Ser Leu Glu Ser Ser Ser Lys Lys Asn Ala Leu Ala Ser	
535 540 545	
gaa ata cag gga tta aga aca gtc gaa atg aaa aag ggc cct act gac	1734
Glu Ile Gln Gly Leu Arg Thr Val Glu Met Lys Lys Gly Pro Thr Asp	
550 555 560	
tca ctg gga atc agc atc gct gga gga gta ggc agc cca ctt ggt gat	1782
Ser Leu Gly Ile Ser Ile Ala Gly Gly Val Gly Ser Pro Leu Gly Asp	
565 570 575 580	
gtg cct ata ttt att gca atg atg cac cca act gga gtt gca gca cag	1830
Val Pro Ile Phe Ile Ala Met Met His Pro Thr Gly Val Ala Ala Gln	
585 590 595	
acc caa aaa ctc aga gtt ggg gat agg att gtc acc atc tgt ggc aca	1878
Thr Gln Lys Leu Arg Val Gly Asp Arg Ile Val Thr Ile Cys Gly Thr	
600 605 610	
tcc act gag ggc atg act cac acc caa gca gtt aac cta ctg aaa aat	1926
Ser Thr Glu Gly Met Thr His Thr Gln Ala Val Asn Leu Leu Lys Asn	
615 620 625	
gca tct ggc tcc att gaa atg cag gtg gtt gct gga gga gac gtg agt	1974
Ala Ser Gly Ser Ile Glu Met Gln Val Val Ala Gly Gly Asp Val Ser	
630 635 640	
gtg gtc aca ggt cat cat cag gag cct gca agt tcc agt ctt tct ttc	2022
Val Val Thr Gly His His Gln Glu Pro Ala Ser Ser Ser Leu Ser Phe	
645 650 655 660	
act ggg ctg acg tca acc agt ata ttt cag gat gat tta gga cct cct	2070
Thr Gly Leu Thr Ser Thr Ser Ile Phe Gln Asp Asp Leu Gly Pro Pro	
665 670 675	
caa tgt aag tct att aca cta gag cga gga cca gat ggc tta ggc ttc	2118
Gln Cys Lys Ser Ile Thr Leu Glu Arg Gly Pro Asp Gly Leu Gly Phe	
680 685 690	
agt ata gtt gga gga tat ggc agc cct cat gga gac tta ccc att tat	2166
Ser Ile Val Gly Gly Tyr Gly Ser Pro His Gly Asp Leu Pro Ile Tyr	
695 700 705	
gtt aaa aca gtg ttt gca aag gga gca gcc tct gaa gac gga cgt ctg	2214
Val Lys Thr Val Phe Ala Lys Gly Ala Ala Ser Glu Asp Gly Arg Leu	
710 715 720	
aaa agg ggc gat cag atc att gct gtc aat ggg cag agt cta gaa gga	2262
Lys Arg Gly Asp Gln Ile Ile Ala Val Asn Gly Gln Ser Leu Glu Gly	
725 730 735 740	
gtc acc cat gaa gaa gct gtt gcc atc ctt aaa cgg aca aaa ggc act	2310
Val Thr His Glu Glu Ala Val Ala Ile Leu Lys Arg Thr Lys Gly Thr	
745 750 755	
gtc act ttg atg gtt ctc tct tgaattggct gccagaattg aaccaaccga	2361
Val Thr Leu Met Val Leu Ser	
760	
accctagct cacctcctac tgtaaagaga atgcactggc cctgacaatt tttatgctgt	2421
gttcagccgg gtcttcaaaa ctgtaggggg gaaataacac ttaagtttct ttttctcatc	2481

tagaaatgct	ttccttactg	acaacctaac	atcatttttc	ttttcttctt	gcattttgtg	2541
aacttaaaga	gaaggaatat	ttgtgtaggt	gaatctcggt	tttattttgtg	gagatatcta	2601
atgttttgta	gtcacatggg	caagaattat	tacatgctaa	gctggttagt	ataaagaaag	2661
ataattctaa	agctaaccaa	agaaaatggc	ttcagtaagt	taggatgaaa	aatgaaaata	2721
taaaataaag	aagaaaatct	cggggagttt	aaaaaaaaatg	cctcaatttg	gcaatctacc	2781
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 Arg Tyr Gly Cys Gly
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1 5 10 15	
acc gtc cag cta gtt att gcc aga ggc tca ttg cct cag ctt gtc agc	95
Thr Val Gln Leu Val Ile Ala Arg Gly Ser Leu Pro Gln Leu Val Ser	
20 25 30	
ccc ata gtt tcc cgt tct cca tct gca gcc agc aca att tca gct cac	143
Pro Ile Val Ser Arg Ser Pro Ser Ala Ala Ser Thr Ile Ser Ala His	
35 40 45	
tct aat ccg gtt cac tgg caa cac atg gaa acg att gaa ttg gtg aat	191
Ser Asn Pro Val His Trp Gln His Met Glu Thr Ile Glu Leu Val Asn	
50 55 60	
gat gga tct ggt ttg gga ttt ggc atc ata gga gga aaa gca act ggt	239
Asp Gly Ser Gly Leu Gly Phe Gly Ile Ile Gly Gly Lys Ala Thr Gly	
65 70 75	
gtg ata gta aaa acc att ctg cct gga gga gta gct gat cag cat ggg	287
Val Ile Val Lys Thr Ile Leu Pro Gly Gly Val Ala Asp Gln His Gly	
80 85 90 95	
cgt tta tgc agt gga gac cac att cta aag att ggt gac aca gat cta	335
Arg Leu Cys Ser Gly Asp His Ile Leu Lys Ile Gly Asp Thr Asp Leu	
100 105 110	
gca gga atg agc agt gag caa gta gca caa gtc ctt agg caa tgt gga	383
Ala Gly Met Ser Ser Glu Gln Val Ala Gln Val Leu Arg Gln Cys Gly	
115 120 125	
aat aga gtt aag ttg atg att gca aga agt gcc ata gaa gaa cgt aca	431
Asn Arg Val Lys Leu Met Ile Ala Arg Ser Ala Ile Glu Glu Arg Thr	
130 135 140	
gca ccc act gct ttg ggc atc acc ctc tcc tca tcc cca act tca acg	479
Ala Pro Thr Ala Leu Gly Ile Thr Leu Ser Ser Ser Pro Thr Ser Thr	
145 150 155	
cca gag ttg cgg gtt gat gct tct act cag aaa ggt gaa gaa agt gag	527
Pro Glu Leu Arg Val Asp Ala Ser Thr Gln Lys Gly Glu Glu Ser Glu	
160 165 170 175	
aca ttt gat gta gaa ctc act aaa aat gtc caa gga tta gga att acc	575
Thr Phe Asp Val Glu Leu Thr Lys Asn Val Gln Gly Leu Gly Ile Thr	
180 185 190	
att gct ggc tac att gga gat aaa aaa ttg gaa cct tca gga atc ttt	623
Ile Ala Gly Tyr Ile Gly Asp Lys Lys Leu Glu Pro Ser Gly Ile Phe	
195 200 205	
gta aag agc att aca aaa agc agt gcc gtt gag cat gat gga aga atc	671
Val Lys Ser Ile Thr Lys Ser Ser Ala Val Glu His Asp Gly Arg Ile	
210 215 220	
caa att gga gac caa att ata gca gta gat ggc aca aac ctt cag ggt	719
Gln Ile Gly Asp Gln Ile Ile Ala Val Asp Gly Thr Asn Leu Gln Gly	
225 230 235	

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atg Met	tca Ser	agg Arg	gaa Glu 275	gac Asp	gtc Val	aca Thr	aaa Lys	gat Asp 280	gca Ala	gat Asp	ttg Leu	tct Ser	cct Pro	gtt Val	aat Asn	863
gcc Ala	agc Ser	ata Ile 290	atc Ile	aaa Lys	gaa Glu	aat Asn	tat Tyr 295	gaa Glu	aaa Lys	gat Asp	gaa Glu	gat Asp	ttt Phe	tta Leu	tct Ser	911
tcg Ser	acg Thr 305	aga Arg	aac Asn	acc Thr	aac Asn	ata Ile 310	tta Leu	cca Pro	act Thr	gaa Glu	gaa Glu	gaa Glu	ggg Gly	tat Tyr	cca Pro	959
tta Leu 320	ctg Leu	tca Ser	gct Ala	gag Glu	ata Ile 325	gaa Glu	gaa Glu	ata Ile	gaa Glu	gat Asp	gca Ala	caa Gln	aaa Lys	caa Gln	gaa Glu 335	1007
gct Ala	gct Ala	ctg Leu	ctg Leu	aca Thr 340	aaa Lys	tgg Trp	caa Gln	agg Arg	att Ile 345	atg Met	gga Gly	att Ile	aac Asn	tat Tyr 350	gaa Glu	1055
ata Ile	gtg Val	gtg Val	gcc Ala 355	cat His	gtg Val	agc Ser	aag Lys	ttt Phe 360	agt Ser	gag Glu	aac Asn	agt Ser	gga Gly	ttg Leu	ggg Gly	1103
ata Ile	agc Ser	ctg Leu	gaa Glu	gcg Ala	aca Thr	gtg Val	gga Gly	cat His	cat His	ttt Phe	atc Ile	cga Arg	tct Ser	gtt Val	cta Leu	1151
cca Pro	gag Glu	ggg Gly	cct Pro	gtt Val	gga Gly	cac His 390	agc Ser	ggg Gly	aag Lys	ctc Leu	ttc Phe 395	agt Ser	gga Gly	gac Asp	gag Glu	1199
cta Leu 400	ttg Leu	gaa Glu	gta Val	aat Asn	ggc Gly 405	ata Ile	act Thr	tta Leu	ctt Leu	ggg Gly 410	gaa Glu	aat Asn	cac His	caa Gln	gat Asp 415	1247
gtg Val	gtg Val	aat Asn	atc Ile	tta Leu 420	aaa Lys	gaa Glu	ctg Leu	cct Pro	ata Ile 425	gaa Glu	gtg Val	aca Thr	atg Met	gtg Val 430	tgc Cys	1295
tgt Cys	cgt Arg	cga Arg	act Thr 435	gtg Val	cca Pro	ccc Pro	acc Thr	acc Thr	caa Gln	tca Ser	gaa Glu	ttg Leu	gat Asp	agc Ser	ctg Leu	1343
gac Asp	tta Leu	tgt Cys	gat Asp	att Ile	gag Glu	cta Leu	aca Thr	gaa Glu	aag Lys	cct Pro	cac His	gta Val	gat Asp	cta Leu	ggg Gly	1391
gag Glu 465	ttc Phe	atc Ile	ggg Gly	tca Ser	tca Ser	gag Glu 470	cca Pro	gag Glu	gat Asp	cca Pro	gtg Val	ctg Leu	gag Ala	atg Met	act Thr	1439

gat gcg ggt cag agt aca gaa gag gtt caa gca cct ttg gcc atg tgg Asp Ala Gly Gln Ser Thr Glu Glu Val Gln Ala Pro Leu Ala Met Trp 480 485 490 495	1487
gag gct ggc att cag cac ata atg ctg gag aaa ggg agc aaa gga ctt Glu Ala Gly Ile Gln His Ile Met Leu Glu Lys Gly Ser Lys Gly Leu 500 505 510	1535
ggt ttt agc att tta gat tat cag gat cca att gat cca gca agc act Gly Phe Ser Ile Leu Asp Tyr Gln Asp Pro Ile Asp Pro Ala Ser Thr 515 520 525	1583
gtg att ata att cgt tct ttg gtg cct ggc ggc att gct gaa aag gat Val Ile Ile Ile Arg Ser Leu Val Pro Gly Gly Ile Ala Glu Lys Asp 530 535 540	1631
gga cga ctt ctt cct ggt gac cga ctc atg ttt gta aac gat gtt aac Gly Arg Leu Leu Pro Gly Asp Arg Leu Met Phe Val Asn Asp Val Asn 545 550 555	1679
ttg gaa aac agc agt ctt gag gaa gct gta gaa gca ctg aag gga gca Leu Glu Asn Ser Ser Leu Glu Glu Ala Val Glu Ala Leu Lys Gly Ala 560 565 570 575	1727
ccg tca ggg act gtg aga ata gga gtt gct aag cct tta ccc ctt Pro Ser Gly Thr Val Arg Ile Gly Val Ala Lys Pro Leu Pro Leu 580 585 590	1772
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gaacgggaaa ctatggggct gacaa	25
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	Met Leu Glu Ala Ile Asp Lys Asn Arg Ala Leu His Ala				
	1	5	10		
gca gag cgc ttg caa acc aag ctg cga gaa cgt ggg gat gta gca aat					157
Ala Glu Arg Leu Gln Thr Lys Leu Arg Glu Arg Gly Asp Val Ala Asn					
	15	20	25		
gaa gac aaa ctg agc ctt ctg aag tca gtc ctg cag agc cct ctc ttc					205
Glu Asp Lys Leu Ser Leu Leu Lys Ser Val Leu Gln Ser Pro Leu Phe					
	30	35	40		45
agt cag att ctg agc ctt cag act tct gta cag cag ctg aaa gac cag					253
Ser Gln Ile Leu Ser Leu Gln Thr Ser Val Gln Gln Leu Lys Asp Gln					
	50	55	60		
gta aat att gca act tca gca act tca aat att gaa tat gcc cac gtt					301
Val Asn Ile Ala Thr Ser Ala Thr Ser Asn Ile Glu Tyr Ala His Val					
	65	70	75		
cct cat ctc agc cca gct gtg att cct act ctg caa aat gaa tcg ttt					349
Pro His Leu Ser Pro Ala Val Ile Pro Thr Leu Gln Asn Glu Ser Phe					
	80	85	90		
tta tta tcc cca aac aat ggg aat ctg gaa gca ctt aca gga cct ggt					397
Leu Leu Ser Pro Asn Asn Gly Asn Leu Glu Ala Leu Thr Gly Pro Gly					
	95	100	105		
att cca cac att aat ggg aaa cct gct tgt gat gaa ttt gat cag ctt					445
Ile Pro His Ile Asn Gly Lys Pro Ala Cys Asp Glu Phe Asp Gln Leu					
	110	115	120		125
atc aaa aat atg gcc cag ggt cgc cat gta gaa gtt ttt gag ctc ctc					493
Ile Lys Asn Met Ala Gln Gly Arg His Val Glu Val Phe Glu Leu Leu					
	130	135	140		
aaa cct cca tct gga ggc ctt ggg ttt agt gtt gtg gga cta aga agt					541
Lys Pro Pro Ser Gly Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser					
	145	150	155		
gaa aac aga gga gag ctg gga ata ttt gtt caa gag ata caa gag ggc					589
Glu Asn Arg Gly Glu Leu Gly Ile Phe Val Gln Glu Ile Gln Glu Gly					
	160	165	170		
agt gtg gcc cat aga gat gga aga ttg aaa gaa act gat caa att ctt					637
Ser Val Ala His Arg Asp Gly Arg Leu Lys Glu Thr Asp Gln Ile Leu					
	175	180	185		
gct atc aat gga cag gct ctt gat cag aca att aca cat cag cag gct					685
Ala Ile Asn Gly Gln Ala Leu Asp Gln Thr Ile Thr His Gln Gln Ala					
	190	195	200		205
atc agc atc ctg cag aaa gcc aaa gat act gtc cag cta gtt att gcc					733
Ile Ser Ile Leu Gln Lys Ala Lys Asp Thr Val Gln Leu Val Ile Ala					
	210	215	220		
aga ggc tca ttg cct cag ctt gtc agc ccc ata gtt tcc cgt tc					777
Arg Gly Ser Leu Pro Gln Leu Val Ser Pro Ile Val Ser Arg					
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 Leu Glu Gln Ser Ser Leu Ala Cys Asn Ala Glu Cys Val Met Leu Gln
 20 25 30

aat gta tct aaa gaa tct ttt gaa agg act att aat ata gca aaa ggc 143
 Asn Val Ser Lys Glu Ser Phe Glu Arg Thr Ile Asn Ile Ala Lys Gly
 35 40 45

aat tct agc cta gga atg aca gtt agt gct aat aaa gat ggc ttg ggg 191
 Asn Ser Ser Leu Gly Met Thr Val Ser Ala Asn Lys Asp Gly Leu Gly
 50 55 60

atg atc gtt cga agc att att cat gga ggt gcc att agt cga gat ggc 239
 Met Ile Val Arg Ser Ile Ile His Gly Gly Ala Ile Ser Arg Asp Gly
 65 70 75

cgg att gcc att ggg gac tgc atc ttg tcc att aat gaa gag tct acc 287
 Arg Ile Ala Ile Gly Asp Cys Ile Leu Ser Ile Asn Glu Glu Ser Thr
 80 85 90 95

atc agt gta acc aat gcc cag gca cga gct atg ttg aga aga cat tct 335
 Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His Ser
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ctc att ggc cct gac ata aaa att act tat gtg cct gca gaa cat ttg 383
 Leu Ile Gly Pro Asp Ile Lys Ile Thr Tyr Val Pro Ala Glu His Leu
 115 120 125

gaa gag ttc aaa ata agc ttg gga caa caa tct gga aga gta atg gca 431
 Glu Glu Phe Lys Ile Ser Leu Gly Gln Gln Ser Gly Arg Val Met Ala
 130 135 140

ctg gat att ttt tct tca tac act ggc aga gac att cca gaa tta cca 479
 Leu Asp Ile Phe Ser Ser Tyr Thr Gly Arg Asp Ile Pro Glu Leu Pro
 145 150 155

gag cga gaa gag gga gag ggt gaa gaa agc gaa ctt caa aac aca gca 527
 Glu Arg Glu Glu Gly Glu Gly Glu Glu Ser Glu Leu Gln Asn Thr Ala
 160 165 170 175

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 Tyr Ser Asn Trp Asn Gln Pro Arg Arg Val Glu Leu Trp Arg Glu Pro
 180 185 190

agc aaa tcc tta ggc atc agc att gtt ggt gga cga ggg atg ggg agt 623
 Ser Lys Ser Leu Gly Ile Ser Ile Val Gly Gly Arg Gly Met Gly Ser
 195 200 205

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Arg Leu Ser Asn Gly Glu Val Met Arg Gly Ile Phe Ile Lys His Val	
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Asn Val Ser Lys Glu Ser Phe Glu Arg Thr Ile Asn Ile Ala Lys Gly	
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Asn Ser Ser Leu Gly Met Thr Val Ser Ala Asn Lys Asp Gly Leu Gly	
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Met Ile Val Arg Ser Ile Ile His Gly Gly Ala Ile Ser Arg Asp Gly	
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cgg att gcc att ggg gac tgc atc ttg tcc att aat gaa gag tct acc	287
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Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His Ser	
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Leu Ile Gly Pro Asp Ile Lys Ile Thr Tyr Val Pro Ala Glu His Leu	
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130 135 140	
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caa gct gtg gaa gcc att cgg aaa gca ggc aac cct gta gtc ttt atg Gln Ala Val Glu Ala Ile Arg Lys Ala Gly Asn Pro Val Val Phe Met 260 265 270	815
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Arg Ile Ala Ile Gly Asp Cys Ile Leu Ser Ile Asn Glu Glu Ser Thr	
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Ile Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His Ser	
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Leu Ile Gly Pro Asp Ile Lys Ile Thr Tyr Val Pro Ala Glu His Leu	
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Glu Glu Phe Lys Ile Ser Leu Gly Gln Gln Ser Gly Arg Val Met Ala	
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Leu Asp Ile Phe Ser Ser Thr Gly Arg Asp Ile Pro Glu Leu Pro	
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Glu Arg Glu Glu Gly Glu Gly Glu Glu Ser Glu Leu Gln Asn Thr Ala	
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Tyr Ser Asn Trp Asn Gln Pro Arg Arg Val Glu Leu Trp Arg Glu Pro	
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agc aaa tcc tta ggc atc agc att gtt ggt gga cga ggg atg ggg agt	623
Ser Lys Ser Leu Gly Ile Ser Ile Val Gly Gly Arg Gly Met Gly Ser	
195 200 205	
cgg cta agc aat gga gaa gtg atg agg ggc att ttc atc aaa cat gtt	671
Arg Leu Ser Asn Gly Glu Val Met Arg Gly Ile Phe Ile Lys His Val	
210 215 220	
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Leu Glu Asp Ser Pro Ala Gly Lys Asn Gly Thr Leu Lys Pro Gly Asp	
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Arg Ile Val Glu Val Asp Gly Met Asp Leu Arg Asp Ala Ser His Glu	
240 245 250 255	
caa gct gtg gaa gcc att cgg aaa gca ggc aac cct gta gtc ttt atg	815
Gln Ala Val Glu Ala Ile Arg Lys Ala Gly Asn Pro Val Val Phe Met	
260 265 270	
gta cag agc att ata aac aga cca agg aaa tcc cct ttg cct tcc ttg	863
Val Gln Ser Ile Ile Asn Arg Pro Arg Lys Ser Pro Leu Pro Ser Leu	
275 280 285	
ctg cac aac ctt tac cct aag tac aac ttc agc agc act aac cca ttt	911
Leu His Asn Leu Tyr Pro Lys Tyr Asn Phe Ser Ser Thr Asn Pro Phe	
290 295 300	
gct gac tct cta caa atc aac gcc gac aag gca ccc agt cag tca gag	959
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Ser Glu
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35 40 45
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Ala Thr Ser Ala Thr Ser Asn Ile Glu Tyr Ala His Val Pro His Leu
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Ser Pro Ala Val Ile Pro Thr Leu Gln Asn Glu Ser Phe Leu Leu Ser
85 90 95
Pro Asn Asn Gly Asn Leu Glu Ala Leu Thr Gly Pro Gly Ile Pro His
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Ile Asn Gly Lys Pro Ala Cys Asp Glu Phe Asp Gln Leu Ile Lys Asn
115 120 125
Met Ala Gln Gly Arg His Val Glu Val Phe Glu Leu Leu Lys Pro Pro
130 135 140
Ser Gly Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser Glu Asn Arg
145 150 155 160
Gly Glu Leu Gly Ile Phe Val Gln Glu Ile Gln Glu Gly Ser Val Ala
165 170 175
His Arg Asp Gly Arg Leu Lys Glu Thr Asp Gln Ile Leu Ala Ile Asn
180 185 190
Gly Gln Ala Leu Asp Gln Thr Ile Thr His Gln Gln Ala Ile Ser Ile
195 200 205
Leu Gln Lys Ala Lys Asp Thr Val Gln Leu Val Ile Ala Arg Gly Ser
210 215 220
Leu Pro Gln Leu Val Ser Pro Ile Val Ser Arg Ser Pro Ser Ala Ala
225 230 235 240
Ser Thr Ile Ser Ala His Ser Asn Pro Val His Trp Gln His Met Glu
245 250 255
Thr Ile Glu Leu Val Asn Asp Gly Ser Gly Leu Gly Phe Gly Ile Ile
260 265 270
Gly Gly Lys Ala Thr Gly Val Ile Val Lys Thr Ile Leu Pro Gly Gly
275 280 285
Val Ala Asp Gln His Gly Arg Leu Cys Ser Gly Asp His Ile Leu Lys
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305 310 315 320
Val Leu Arg Gln Cys Gly Asn Arg Val Lys Leu Met Ile Ala Arg Ser
325 330 335
Ala Ile Glu Glu Arg Thr Ala Pro Thr Ala Leu Gly Ile Thr Leu Ser
340 345 350
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355 360 365
Lys Gly Glu Glu Ser Glu Thr Phe Asp Val Glu Leu Thr Lys Asn Val
370 375 380
Gln Gly Leu Gly Ile Thr Ile Ala Gly Tyr Ile Gly Asp Lys Lys Leu
385 390 395 400
Glu Pro Ser Gly Ile Phe Val Lys Ser Ile Thr Lys Ser Ser Ala Val
405 410 415

Glu	His	Asp	Gly	Arg	Ile	Gln	Ile	Gly	Asp	Gln	Ile	Ile	Ala	Val	Asp
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Gly	Thr	Asn	Leu	Gln	Gly	Phe	Thr	Asn	Gln	Gln	Ala	Val	Glu	Val	Leu
		435					440					445			
Arg	His	Thr	Gly	Gln	Thr	Val	Leu	Leu	Thr	Leu	Met	Arg	Arg	Gly	Met
	450					455					460				
Lys	Gln	Glu	Ala	Glu	Leu	Met	Ser	Arg	Glu	Asp	Val	Thr	Lys	Asp	Ala
465					470					475					480
Asp	Leu	Ser	Pro	Val	Asn	Ala	Ser	Ile	Ile	Lys	Glu	Asn	Tyr	Glu	Lys
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Asp	Glu	Asp	Phe	Leu	Ser	Ser	Thr	Arg	Asn	Thr	Asn	Ile	Leu	Pro	Thr
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Glu	Glu	Glu	Gly	Tyr	Pro	Leu	Leu	Ser	Ala	Glu	Ile	Glu	Glu	Ile	Glu
		515					520					525			
Asp	Ala	Gln	Lys	Gln	Glu	Ala	Ala	Leu	Leu	Thr	Lys	Trp	Gln	Arg	Ile
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Met	Gly	Ile	Asn	Tyr	Glu	Ile	Val	Val	Ala	His	Val	Ser	Lys	Phe	Ser
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Glu	Asn	Ser	Gly	Leu	Gly	Ile	Ser	Leu	Glu	Ala	Thr	Val	Gly	His	His
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Phe	Ile	Arg	Ser	Val	Leu	Pro	Glu	Gly	Pro	Val	Gly	His	Ser	Gly	Lys
			580					585					590		
Leu	Phe	Ser	Gly	Asp	Glu	Leu	Leu	Glu	Val	Asn	Gly	Ile	Thr	Leu	Leu
		595					600					605			
Gly	Glu	Asn	His	Gln	Asp	Val	Val	Asn	Ile	Leu	Lys	Glu	Leu	Pro	Ile
	610					615					620				
Glu	Val	Thr	Met	Val	Cys	Cys	Arg	Arg	Thr	Val	Pro	Pro	Thr	Thr	Gln
625					630					635					640
Ser	Glu	Leu	Asp	Ser	Leu	Asp	Leu	Cys	Asp	Ile	Glu	Leu	Thr	Glu	Lys
			645						650					655	
Pro	His	Val	Asp	Leu	Gly	Glu	Phe	Ile	Gly	Ser	Ser	Glu	Pro	Glu	Asp
			660					665					670		
Pro	Val	Leu	Ala	Met	Thr	Asp	Ala	Gly	Gln	Ser	Thr	Glu	Glu	Val	Gln
		675					680					685			
Ala	Pro	Leu	Ala	Met	Trp	Glu	Ala	Gly	Ile	Gln	His	Ile	Met	Leu	Glu
	690					695					700				
Lys	Gly	Ser	Lys	Gly	Leu	Gly	Phe	Ser	Ile	Leu	Asp	Tyr	Gln	Asp	Pro
705					710					715					720
Ile	Asp	Pro	Ala	Ser	Thr	Val	Ile	Ile	Ile	Arg	Ser	Leu	Val	Pro	Gly
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Gly	Ile	Ala	Glu	Lys	Asp	Gly	Arg	Leu	Leu	Pro	Gly	Asp	Arg	Leu	Met
		740						745					750		
Phe	Val	Asn	Asp	Val	Asn	Leu	Glu	Asn	Ser	Ser	Leu	Glu	Glu	Ala	Val
		755					760					765			
Glu	Ala	Leu	Lys	Gly	Ala	Pro	Ser	Gly	Thr	Val	Arg	Ile	Gly	Val	Ala
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Lys	Pro	Leu	Pro	Leu	Ser	Pro	Glu	Glu	Gly	Tyr	Val	Ser	Ala	Lys	Glu
785					790					795					800
Asp	Ser	Phe	Leu	Tyr	Pro	Pro	His	Ser	Cys	Glu	Glu	Ala	Gly	Leu	Ala
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Asp	Lys	Pro	Leu	Phe	Arg	Ala	Asp	Leu	Ala	Leu	Val	Gly	Thr	Asn	Asp
			820					825					830		
Ala	Asp	Leu	Val	Asp	Glu	Ser	Thr	Phe	Glu	Ser	Pro	Tyr	Ser	Pro	Glu
		835					840					845			
Asn	Asp	Ser	Ile	Tyr	Ser	Thr	Gln	Ala	Ser	Ile	Leu	Ser	Leu	His	Gly
	850					855					860				
Ser	Ser	Cys	Gly	Asp	Gly	Leu	Asn	Tyr	Gly	Ser	Ser	Leu	Pro	Ser	Ser
865					870					875					880
Pro	Pro	Lys	Asp	Val	Ile	Glu	Asn	Ser	Cys	Asp	Pro	Val	Leu	Asp	Leu
			885						890					895	
His	Met	Ser	Leu	Glu	Glu	Leu	Tyr	Thr	Gln	Asn	Leu	Leu	Glu	Arg	Gln
			900					905					910		

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Glu	Cys	Glu	Asn	Thr	Ile	Val	Trp	Thr	Glu	Ser	His	Leu	Pro	Ser	Glu	945	950	955
Val	Ile	Ser	Ser	Ala	Glu	Leu	Pro	Ser	Val	Leu	Pro	Asp	Ser	Ala	Gly	965	970	975
Lys	Gly	Ser	Glu	His	Leu	Leu	Glu	Gln	Ser	Ser	Leu	Ala	Cys	Asn	Ala	980	985	990
Glu	Cys	Val	Met	Leu	Gln	Asn	Val	Ser	Lys	Glu	Ser	Phe	Glu	Arg	Thr	995	1000	1005
Ile	Asn	Ile	Ala	Lys	Gly	Asn	Ser	Ser	Leu	Gly	Met	Thr	Val	Ser	Ala	1010	1015	1020
Asn	Lys	Asp	Gly	Leu	Gly	Met	Ile	Val	Arg	Ser	Ile	Ile	His	Gly	Gly	1025	1030	1035
Ala	Ile	Ser	Arg	Asp	Gly	Arg	Ile	Ala	Ile	Gly	Asp	Cys	Ile	Leu	Ser	1045	1050	1055
Ile	Asn	Glu	Glu	Ser	Thr	Ile	Ser	Val	Thr	Asn	Ala	Gln	Ala	Arg	Ala	1060	1065	1070
Met	Leu	Arg	Arg	His	Ser	Leu	Ile	Gly	Pro	Asp	Ile	Lys	Ile	Thr	Tyr	1075	1080	1085
Val	Pro	Ala	Glu	His	Leu	Glu	Glu	Phe	Lys	Ile	Ser	Leu	Gly	Gln	Gln	1090	1095	1100
Ser	Gly	Arg	Val	Met	Ala	Leu	Asp	Ile	Phe	Ser	Ser	Tyr	Thr	Gly	Arg	1105	1110	1115
Asp	Ile	Pro	Glu	Leu	Pro	Glu	Arg	Glu	Glu	Gly	Glu	Gly	Glu	Glu	Ser	1125	1130	1135
Glu	Leu	Gln	Asn	Thr	Ala	Tyr	Ser	Asn	Trp	Asn	Gln	Pro	Arg	Arg	Val	1140	1145	1150
Glu	Leu	Trp	Arg	Glu	Pro	Ser	Lys	Ser	Leu	Gly	Ile	Ser	Ile	Val	Gly	1155	1160	1165
Gly	Arg	Gly	Met	Gly	Ser	Arg	Leu	Ser	Asn	Gly	Glu	Val	Met	Arg	Gly	1170	1175	1180
Ile	Phe	Ile	Lys	His	Val	Leu	Glu	Asp	Ser	Pro	Ala	Gly	Lys	Asn	Gly	1185	1190	1195
Thr	Leu	Lys	Pro	Gly	Asp	Arg	Ile	Val	Glu	Ala	Pro	Ser	Gln	Ser	Glu	1205	1210	1215
Ser	Glu	Pro	Glu	Lys	Ala	Pro	Leu	Cys	Ser	Val	Pro	Pro	Pro	Pro	Pro	1220	1225	1230
Ser	Ala	Phe	Ala	Glu	Met	Gly	Ser	Asp	His	Thr	Gln	Ser	Ser	Ala	Ser	1235	1240	1245
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Arg	Asn	Lys	Asp	Ala	Val	Asn	Gln	Met	Ala	Val	Cys	Pro	Gly	Asn	Ala	1365	1370	1375
Val	Glu	Pro	Leu	Pro	Ser	Asn	Ser	Glu	Asn	Leu	Gln	Asn	Lys	Glu	Thr	1380	1385	1390
Glu	Pro	Thr	Val	Thr	Thr	Ser	Asp	Ala	Ala	Val	Asp	Leu	Ser	Ser	Phe	1395	1400	1405

Lys Asn Val Gln His Leu Glu Leu Pro Lys Asp Gln Gly Gly Leu Gly
 1410 1415 1420
 Ile Ala Ile Ser Glu Glu Asp Thr Leu Ser Gly Val Ile Ile Lys Ser
 1425 1430 1435 1440
 Leu Thr Glu His Gly Val Ala Ala Thr Asp Gly Arg Leu Lys Val Gly
 1445 1450 1455
 Asp Gln Ile Leu Ala Val Asp Asp Glu Ile Val Val Gly Tyr Pro Ile
 1460 1465 1470
 Glu Lys Phe Ile Ser Leu Leu Lys Thr Ala Lys Met Thr Val Lys Leu
 1475 1480 1485
 Thr Ile His Ala Glu Asn Pro Asp Ser Gln Ala Val Pro Ser Ala Ala
 1490 1495 1500
 Gly Ala Ala Ser Gly Glu Lys Lys Asn Ser Ser Gln Ser Leu Met Val
 1505 1510 1515 1520
 Pro Gln Ser Gly Ser Pro Glu Pro Glu Ser Ile Arg Asn Thr Ser Arg
 1525 1530 1535
 Ser Ser Thr Pro Ala Ile Phe Ala Ser Asp Pro Ala Thr Cys Pro Ile
 1540 1545 1550
 Ile Pro Gly Cys Glu Thr Thr Ile Glu Ile Ser Lys Gly Arg Thr Gly
 1555 1560 1565
 Leu Gly Leu Ser Ile Val Gly Gly Ser Asp Thr Leu Leu Gly Ala Phe
 1570 1575 1580
 Ile Ile His Glu Val Tyr Glu Glu Gly Ala Ala Cys Lys Asp Gly Arg
 1585 1590 1595 1600
 Leu Trp Ala Gly Asp Gln Ile Leu Glu Val Asn Gly Ile Asp Leu Arg
 1605 1610 1615
 Lys Ala Thr His Asp Glu Ala Ile Asn Val Leu Arg Gln Thr Pro Gln
 1620 1625 1630
 Arg Val Arg Leu Thr Leu Tyr Arg Asp Glu Ala Pro Tyr Lys Glu Glu
 1635 1640 1645
 Glu Val Cys Asp Thr Leu Thr Ile Glu Leu Gln Lys Lys Pro Gly Lys
 1650 1655 1660
 Gly Leu Gly Leu Ser Ile Val Gly Lys Arg Asn Asp Thr Gly Val Phe
 1665 1670 1675 1680
 Val Ser Asp Ile Val Lys Gly Gly Ile Ala Asp Pro Asp Gly Arg Leu
 1685 1690 1695
 Ile Gln Gly Asp Gln Ile Leu Leu Val Asn Gly Glu Asp Val Arg Asn
 1700 1705 1710
 Ala Ser Gln Glu Ala Val Ala Ala Leu Leu Lys Cys Ser Leu Gly Thr
 1715 1720 1725
 Val Thr Leu Glu Val Gly Arg Ile Lys Ala Gly Pro Phe His Ser Glu
 1730 1735 1740
 Arg Arg Pro Ser Gln Thr Ser Gln Val Ser Glu Gly Ser Leu Ser Ser
 1745 1750 1755 1760
 Phe Thr Phe Pro Leu Ser Gly Ser Ser Thr Ser Glu Ser Leu Glu Ser
 1765 1770 1775
 Ser Ser Lys Lys Asn Ala Leu Ala Ser Glu Ile Gln Gly Leu Arg Thr
 1780 1785 1790
 Val Glu Met Lys Lys Gly Pro Thr Asp Ser Leu Gly Ile Ser Ile Ala
 1795 1800 1805
 Gly Gly Val Gly Ser Pro Leu Gly Asp Val Pro Ile Phe Ile Ala Met
 1810 1815 1820
 Met His Pro Thr Gly Val Ala Ala Gln Thr Gln Lys Leu Arg Val Gly
 1825 1830 1835 1840
 Asp Arg Ile Val Thr Ile Cys Gly Thr Ser Thr Glu Gly Met Thr His
 1845 1850 1855
 Thr Gln Ala Val Asn Leu Leu Lys Asn Ala Ser Gly Ser Ile Glu Met
 1860 1865 1870
 Gln Val Val Ala Gly Gly Asp Val Ser Val Val Thr Gly His His Gln
 1875 1880 1885
 Glu Pro Ala Ser Ser Ser Leu Ser Phe Thr Gly Leu Thr Ser Thr Ser
 1890 1895 1900

Ile Phe Gln Asp Asp Leu Gly Pro Pro Gln Cys Lys Ser Ile Thr Leu
 1905 1910 1915 1920
 Glu Arg Gly Pro Asp Gly Leu Gly Phe Ser Ile Val Gly Gly Tyr Gly
 1925 1930 1935
 Ser Pro His Gly Asp Leu Pro Ile Tyr Val Lys Thr Val Phe Ala Lys
 1940 1945 1950
 Gly Ala Ala Ser Glu Asp Gly Arg Leu Lys Arg Gly Asp Gln Ile Ile
 1955 1960 1965
 Ala Val Asn Gly Gln Ser Leu Glu Gly Val Thr His Glu Glu Ala Val
 1970 1975 1980
 Ala Ile Leu Lys Arg Thr Lys Gly Thr Val Thr Leu Met Val Leu Ser
 1985 1990 1995 2000

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<400> 83
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 20 25 30
 Leu Ser Leu Leu Lys Ser Val Leu Gln Ser Pro Leu Phe Ser Gln Ile
 35 40 45
 Leu Ser Leu Gln Thr Ser Val Gln Gln Leu Lys Asp Gln Val Asn Ile
 50 55 60
 Ala Thr Ser Ala Thr Ser Asn Ile Glu Tyr Ala His Val Pro His Leu
 65 70 75 80
 Ser Pro Ala Val Ile Pro Thr Leu Gln Asn Glu Ser Phe Leu Leu Ser
 85 90 95
 Pro Asn Asn Gly Asn Leu Glu Ala Leu Thr Gly Pro Gly Ile Pro His
 100 105 110
 Ile Asn Gly Lys Pro Ala Cys Asp Glu Phe Asp Gln Leu Ile Lys Asn
 115 120 125
 Met Ala Gln Gly Arg His Val Glu Val Phe Glu Leu Leu Lys Pro Pro
 130 135 140
 Ser Gly Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser Glu Asn Arg
 145 150 155 160
 Gly Glu Leu Gly Ile Phe Val Gln Glu Ile Gln Glu Gly Ser Val Ala
 165 170 175
 His Arg Asp Gly Arg Leu Lys Glu Thr Asp Gln Ile Leu Ala Ile Asn
 180 185 190
 Gly Gln Ala Leu Asp Gln Thr Ile Thr His Gln Gln Ala Ile Ser Ile
 195 200 205
 Leu Gln Lys Ala Lys Asp Thr Val Gln Leu Val Ile Ala Arg Gly Ser
 210 215 220
 Leu Pro Gln Leu Val Ser Pro Ile Val Ser Arg Ser Pro Ser Ala Ala
 225 230 235 240
 Ser Thr Ile Ser Ala His Ser Asn Pro Val His Trp Gln His Met Glu
 245 250 255
 Thr Ile Glu Leu Val Asn Asp Gly Ser Gly Leu Gly Phe Gly Ile Ile
 260 265 270
 Gly Gly Lys Ala Thr Gly Val Ile Val Lys Thr Ile Leu Pro Gly Gly
 275 280 285
 Val Ala Asp Gln His Gly Arg Leu Cys Ser Gly Asp His Ile Leu Lys
 290 295 300
 Ile Gly Asp Thr Asp Leu Ala Gly Met Ser Ser Glu Gln Val Ala Gln
 305 310 315 320
 Val Leu Arg Gln Cys Gly Asn Arg Val Lys Leu Met Ile Ala Arg Ser
 325 330 335

Ala	Ile	Glu	Glu	Arg	Thr	Ala	Pro	Thr	Ala	Leu	Gly	Ile	Thr	Leu	Ser
			340					345					350		
Ser	Ser	Pro	Thr	Ser	Thr	Pro	Glu	Leu	Arg	Val	Asp	Ala	Ser	Thr	Gln
		355					360					365			
Lys	Gly	Glu	Glu	Ser	Glu	Thr	Phe	Asp	Val	Glu	Leu	Thr	Lys	Asn	Val
	370					375					380				
Gln	Gly	Leu	Gly	Ile	Thr	Ile	Ala	Gly	Tyr	Ile	Gly	Asp	Lys	Lys	Leu
385					390					395					400
Glu	Pro	Ser	Gly	Ile	Phe	Val	Lys	Ser	Ile	Thr	Lys	Ser	Ser	Ala	Val
			405						410					415	
Glu	His	Asp	Gly	Arg	Ile	Gln	Ile	Gly	Asp	Gln	Ile	Ile	Ala	Val	Asp
			420					425					430		
Gly	Thr	Asn	Leu	Gln	Gly	Phe	Thr	Asn	Gln	Gln	Ala	Val	Glu	Val	Leu
		435					440					445			
Arg	His	Thr	Gly	Gln	Thr	Val	Leu	Leu	Thr	Leu	Met	Arg	Arg	Gly	Met
	450					455					460				
Lys	Gln	Glu	Ala	Glu	Leu	Met	Ser	Arg	Glu	Asp	Val	Thr	Lys	Asp	Ala
465					470					475					480
Asp	Leu	Ser	Pro	Val	Asn	Ala	Ser	Ile	Ile	Lys	Glu	Asn	Tyr	Glu	Lys
			485						490					495	
Asp	Glu	Asp	Phe	Leu	Ser	Ser	Thr	Arg	Asn	Thr	Asn	Ile	Leu	Pro	Thr
			500					505					510		
Glu	Glu	Glu	Gly	Tyr	Pro	Leu	Leu	Ser	Ala	Glu	Ile	Glu	Glu	Ile	Glu
		515					520					525			
Asp	Ala	Gln	Lys	Gln	Glu	Ala	Ala	Leu	Leu	Thr	Lys	Trp	Gln	Arg	Ile
	530					535					540				
Met	Gly	Ile	Asn	Tyr	Glu	Ile	Val	Val	Ala	His	Val	Ser	Lys	Phe	Ser
545					550					555					560
Glu	Asn	Ser	Gly	Leu	Gly	Ile	Ser	Leu	Glu	Ala	Thr	Val	Gly	His	His
			565						570					575	
Phe	Ile	Arg	Ser	Val	Leu	Pro	Glu	Gly	Pro	Val	Gly	His	Ser	Gly	Lys
			580					585					590		
Leu	Phe	Ser	Gly	Asp	Glu	Leu	Leu	Glu	Val	Asn	Gly	Ile	Thr	Leu	Leu
		595					600					605			
Gly	Glu	Asn	His	Gln	Asp	Val	Val	Asn	Ile	Leu	Lys	Glu	Leu	Pro	Ile
	610					615					620				
Glu	Val	Thr	Met	Val	Cys	Cys	Arg	Arg	Thr	Val	Pro	Pro	Thr	Thr	Gln
625					630					635					640
Ser	Glu	Leu	Asp	Ser	Leu	Asp	Leu	Cys	Asp	Ile	Glu	Leu	Thr	Glu	Lys
			645						650					655	
Pro	His	Val	Asp	Leu	Gly	Glu	Phe	Ile	Gly	Ser	Ser	Glu	Pro	Glu	Asp
			660					665					670		
Pro	Val	Leu	Ala	Met	Thr	Asp	Ala	Gly	Gln	Ser	Thr	Glu	Glu	Val	Gln
		675					680					685			
Ala	Pro	Leu	Ala	Met	Trp	Glu	Ala	Gly	Ile	Gln	His	Ile	Met	Leu	Glu
	690					695					700				
Lys	Gly	Ser	Lys	Gly	Leu	Gly	Phe	Ser	Ile	Leu	Asp	Tyr	Gln	Asp	Pro
705					710					715					720
Ile	Asp	Pro	Ala	Ser	Thr	Val	Ile	Ile	Ile	Arg	Ser	Leu	Val	Pro	Gly
			725						730					735	
Gly	Ile	Ala	Glu	Lys	Asp	Gly	Arg	Leu	Leu	Pro	Gly	Asp	Arg	Leu	Met
		740						745					750		
Phe	Val	Asn	Asp	Val	Asn	Leu	Glu	Asn	Ser	Ser	Leu	Glu	Glu	Ala	Val
		755					760					765			
Glu	Ala	Leu	Lys	Gly	Ala	Pro	Ser	Gly	Thr	Val	Arg	Ile	Gly	Val	Ala
	770					775					780				
Lys	Pro	Leu	Pro	Leu	Ser	Pro	Glu	Glu	Gly	Tyr	Val	Ser	Ala	Lys	Glu
785					790					795					800
Asp	Ser	Phe	Leu	Tyr	Pro	Pro	His	Ser	Cys	Glu	Glu	Ala	Gly	Leu	Ala
			805						810					815	
Asp	Lys	Pro	Leu	Phe	Arg	Ala	Asp	Leu	Ala	Leu	Val	Gly	Thr	Asn	Asp
			820					825					830		

Ala	Asp	Leu	Val	Asp	Glu	Ser	Thr	Phe	Glu	Ser	Pro	Tyr	Ser	Pro	Glu	835	840	845
Asn	Asp	Ser	Ile	Tyr	Ser	Thr	Gln	Ala	Ser	Ile	Leu	Ser	Leu	His	Gly	850	855	860
Ser	Ser	Cys	Gly	Asp	Gly	Leu	Asn	Tyr	Gly	Ser	Ser	Leu	Pro	Ser	Ser	865	870	875
Pro	Pro	Lys	Asp	Val	Ile	Glu	Asn	Ser	Cys	Asp	Pro	Val	Leu	Asp	Leu	885	890	895
His	Met	Ser	Leu	Glu	Glu	Leu	Tyr	Thr	Gln	Asn	Leu	Leu	Glu	Arg	Gln	900	905	910
Asp	Glu	Asn	Thr	Pro	Ser	Val	Asp	Ile	Ser	Met	Gly	Pro	Ala	Ser	Gly	915	920	925
Phe	Thr	Ile	Asn	Asp	Tyr	Thr	Pro	Ala	Asn	Ala	Ile	Glu	Gln	Gln	Tyr	930	935	940
Glu	Cys	Glu	Asn	Thr	Ile	Val	Trp	Thr	Glu	Ser	His	Leu	Pro	Ser	Glu	945	950	955
Val	Ile	Ser	Ser	Ala	Glu	Leu	Pro	Ser	Val	Leu	Pro	Asp	Ser	Ala	Gly	965	970	975
Lys	Gly	Ser	Glu	Tyr	Leu	Leu	Glu	Gln	Ser	Ser	Leu	Ala	Cys	Asn	Ala	980	985	990
Glu	Cys	Val	Met	Leu	Gln	Asn	Val	Ser	Lys	Glu	Ser	Phe	Glu	Arg	Thr	995	1000	1005
Ile	Asn	Ile	Ala	Lys	Gly	Asn	Ser	Ser	Leu	Gly	Met	Thr	Val	Ser	Ala	1010	1015	1020
Asn	Lys	Asp	Gly	Leu	Gly	Met	Ile	Val	Arg	Ser	Ile	Ile	His	Gly	Gly	1025	1030	1035
Ala	Ile	Ser	Arg	Asp	Gly	Arg	Ile	Ala	Ile	Gly	Asp	Cys	Ile	Leu	Ser	1045	1050	1055
Ile	Asn	Glu	Glu	Ser	Thr	Ile	Ser	Val	Thr	Asn	Ala	Gln	Ala	Arg	Ala	1060	1065	1070
Met	Leu	Arg	Arg	His	Ser	Leu	Ile	Gly	Pro	Asp	Ile	Lys	Ile	Thr	Tyr	1075	1080	1085
Val	Pro	Ala	Glu	His	Leu	Glu	Glu	Phe	Lys	Ile	Ser	Leu	Gly	Gln	Gln	1090	1095	1100
Ser	Gly	Arg	Val	Met	Ala	Leu	Asp	Ile	Phe	Ser	Ser	Tyr	Thr	Gly	Arg	1105	1110	1115
Asp	Ile	Pro	Glu	Leu	Pro	Glu	Arg	Glu	Glu	Gly	Glu	Gly	Glu	Glu	Ser	1125	1130	1135
Glu	Leu	Gln	Asn	Thr	Ala	Tyr	Ser	Asn	Trp	Asn	Gln	Pro	Arg	Arg	Val	1140	1145	1150
Glu	Leu	Trp	Arg	Glu	Pro	Ser	Lys	Ser	Leu	Gly	Ile	Ser	Ile	Val	Gly	1155	1160	1165
Gly	Arg	Gly	Met	Gly	Ser	Arg	Leu	Ser	Asn	Gly	Glu	Val	Met	Arg	Gly	1170	1175	1180
Ile	Phe	Ile	Lys	His	Val	Leu	Glu	Asp	Arg	Pro	Ala	Gly	Lys	Asn	Gly	1185	1190	1195
Thr	Leu	Lys	Pro	Gly	Asp	Arg	Ile	Val	Glu	Val	Asp	Gly	Met	Asp	Leu	1205	1210	1215
Arg	Asp	Ala	Ser	His	Glu	Gln	Ala	Val	Glu	Ala	Ile	Arg	Lys	Ala	Gly	1220	1225	1230
Asn	Pro	Val	Val	Phe	Met	Val	Gln	Ser	Ile	Ile	Asn	Arg	Pro	Arg	Lys	1235	1240	1245
Ser	Pro	Leu	Pro	Ser	Leu	Leu	His	Asn	Leu	Tyr	Pro	Lys	Tyr	Asn	Phe	1250	1255	1260
Ser	Ser	Thr	Asn	Pro	Phe	Ala	Asp	Ser	Leu	Gln	Ile	Asn	Ala	Asp	Lys	1265	1270	1275
Ala	Pro	Ser	Gln	Ser	Glu	Ser	Glu	Pro	Glu	Lys	Ala	Pro	Leu	Cys	Ser	1285	1290	1295
Val	Pro	Pro	Pro	Pro	Pro	Ser	Ala	Phe	Ala	Glu	Met	Gly	Ser	Asp	His	1300	1305	1310
Thr	Gln	Ser	Ser	Ala	Ser	Lys	Ile	Ser	Gln	Asp	Val	Asp	Lys	Glu	Asp	1315	1320	1325

Glu Phe Gly Tyr Ser Trp Lys Asn Ile Arg Glu Arg Tyr Gly Thr Leu
 1330 1335 1340
 Thr Gly Glu Leu His Met Ile Glu Leu Glu Lys Gly His Ser Gly Leu
 1345 1350 1355 1360
 Gly Leu Ser Leu Ala Gly Asn Lys Asp Arg Ser Arg Met Ser Val Phe
 1365 1370 1375
 Ile Val Gly Ile Asp Pro Asn Gly Ala Ala Gly Lys Asp Gly Arg Leu
 1380 1385 1390
 Gln Ile Ala Asp Glu Leu Leu Glu Ile Asn Gly Gln Ile Leu Tyr Gly
 1395 1400 1405
 Arg Ser His Gln Asn Ala Ser Ser Ile Ile Lys Cys Ala Pro Ser Lys
 1410 1415 1420
 Val Lys Ile Ile Phe Ile Arg Asn Lys Asp Ala Val Asn Gln Met Ala
 1425 1430 1435 1440
 Val Cys Pro Gly Asn Ala Val Glu Pro Leu Pro Ser Asn Ser Glu Asn
 1445 1450 1455
 Leu Gln Asn Lys Glu Thr Glu Pro Thr Val Thr Thr Ser Asp Ala Ala
 1460 1465 1470
 Val Asp Leu Ser Ser Phe Lys Asn Val Gln His Leu Glu Leu Pro Lys
 1475 1480 1485
 Asp Gln Gly Gly Leu Gly Ile Ala Ile Ser Glu Glu Asp Thr Leu Ser
 1490 1495 1500
 Gly Val Ile Ile Lys Ser Leu Thr Glu His Gly Val Ala Ala Thr Asp
 1505 1510 1515 1520
 Gly Arg Leu Lys Val Gly Asp Gln Ile Leu Ala Val Asp Asp Glu Ile
 1525 1530 1535
 Val Val Gly Tyr Pro Ile Glu Lys Phe Ile Ser Leu Leu Lys Thr Ala
 1540 1545 1550
 Lys Met Thr Val Lys Leu Thr Ile His Ala Glu Asn Pro Asp Ser Gln
 1555 1560 1565
 Ala Val Pro Ser Ala Ala Gly Ala Ala Ser Gly Glu Lys Lys Asn Ser
 1570 1575 1580
 Ser Gln Ser Leu Met Val Pro Gln Ser Gly Ser Pro Glu Pro Glu Ser
 1585 1590 1595 1600
 Ile Arg Asn Thr Ser Arg Ser Ser Thr Pro Ala Ile Phe Ala Ser Asp
 1605 1610 1615
 Pro Ala Thr Cys Pro Ile Ile Pro Gly Cys Glu Thr Thr Ile Glu Ile
 1620 1625 1630
 Ser Lys Gly Arg Thr Gly Leu Gly Leu Ser Ile Val Gly Gly Ser Asp
 1635 1640 1645
 Thr Leu Leu Gly Ala Phe Ile Ile His Glu Val Tyr Glu Glu Gly Ala
 1650 1655 1660
 Ala Cys Lys Asp Gly Arg Leu Trp Ala Gly Asp Gln Ile Leu Glu Val
 1665 1670 1675 1680
 Asn Gly Ile Asp Leu Arg Lys Ala Thr His Asp Glu Ala Ile Asn Val
 1685 1690 1695
 Leu Arg Gln Thr Pro Gln Arg Val Arg Leu Thr Leu Tyr Arg Asp Glu
 1700 1705 1710
 Ala Pro Tyr Lys Glu Glu Glu Val Cys Asp Thr Leu Thr Ile Glu Leu
 1715 1720 1725
 Gln Lys Lys Pro Gly Lys Gly Leu Gly Leu Ser Ile Val Gly Lys Arg
 1730 1735 1740
 Asn Asp Thr Gly Val Phe Val Ser Asp Ile Val Lys Gly Gly Ile Ala
 1745 1750 1755 1760
 Asp Pro Asp Gly Arg Leu Ile Gln Gly Asp Gln Ile Leu Leu Val Asn
 1765 1770 1775
 Gly Glu Asp Val Arg Asn Ala Ser Gln Glu Ala Val Ala Ala Leu Leu
 1780 1785 1790
 Lys Cys Ser Leu Gly Thr Val Thr Leu Glu Val Gly Arg Ile Lys Ala
 1795 1800 1805
 Gly Pro Phe His Ser Glu Arg Arg Pro Ser Gln Thr Ser Gln Val Ser
 1810 1815 1820

Glu Gly Ser Leu Ser Ser Phe Thr Phe Pro Leu Ser Gly Ser Ser Thr
 1825 1830 1835 1840
 Ser Glu Ser Leu Glu Ser Ser Ser Lys Lys Asn Ala Leu Ala Ser Glu
 1845 1850 1855
 Ile Gln Gly Leu Arg Thr Val Glu Met Lys Lys Gly Pro Thr Asp Ser
 1860 1865 1870
 Leu Gly Ile Ser Ile Ala Gly Gly Val Gly Ser Pro Leu Gly Asp Val
 1875 1880 1885
 Pro Ile Phe Ile Ala Met Met His Pro Thr Gly Val Ala Ala Gln Thr
 1890 1895 1900
 Gln Lys Leu Arg Val Gly Asp Arg Ile Val Thr Ile Cys Gly Thr Ser
 1905 1910 1915 1920
 Thr Glu Gly Met Thr His Thr Gln Ala Val Asn Leu Leu Lys Asn Ala
 1925 1930 1935
 Ser Gly Ser Ile Glu Met Gln Val Val Ala Gly Gly Asp Val Ser Val
 1940 1945 1950
 Val Thr Gly His His Gln Glu Pro Ala Ser Ser Ser Leu Ser Phe Thr
 1955 1960 1965
 Gly Leu Thr Ser Thr Ser Ile Phe Gln Asp Asp Leu Gly Pro Pro Gln
 1970 1975 1980
 Cys Lys Ser Ile Thr Leu Glu Arg Gly Pro Asp Gly Leu Gly Phe Ser
 1985 1990 1995 2000
 Ile Val Gly Gly Tyr Gly Ser Pro His Gly Asp Leu Pro Ile Tyr Val
 2005 2010 2015
 Lys Thr Val Phe Ala Lys Gly Ala Ala Ser Glu Asp Gly Arg Leu Lys
 2020 2025 2030
 Arg Gly Asp Gln Ile Ile Ala Val Asn Gly Gln Ser Leu Glu Gly Val
 2035 2040 2045
 Thr His Glu Glu Ala Val Ala Ile Leu Lys Arg Thr Lys Gly Thr Val
 2050 2055 2060
 Thr Leu Met Val Leu Ser
 2065 2070

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<400> 84
 Met Leu Glu Ala Ile Asp Lys Asn Arg Ala Leu His Ala Ala Glu Arg
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 Leu Gln Thr Lys Leu Arg Glu Arg Gly Asp Val Ala Asn Glu Asp Lys
 20 25 30
 Leu Ser Leu Leu Lys Ser Val Leu Gln Ser Pro Leu Phe Ser Gln Ile
 35 40 45
 Leu Ser Leu Gln Thr Ser Val Gln Gln Leu Lys Asp Gln Val Asn Ile
 50 55 60
 Ala Thr Ser Ala Thr Ser Asn Ile Glu Tyr Ala His Val Pro His Leu
 65 70 75 80
 Ser Pro Ala Val Ile Pro Thr Leu Gln Asn Glu Ser Phe Leu Leu Ser
 85 90 95
 Pro Asn Asn Gly Asn Leu Glu Ala Leu Thr Gly Pro Gly Ile Pro His
 100 105 110
 Ile Asn Gly Lys Pro Ala Cys Asp Glu Phe Asp Gln Leu Ile Lys Asn
 115 120 125
 Met Ala Gln Gly Arg His Val Glu Val Phe Glu Leu Leu Lys Pro Pro
 130 135 140
 Ser Gly Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser Glu Asn Arg
 145 150 155 160
 Gly Glu Leu Gly Ile Phe Val Gln Glu Ile Gln Glu Gly Ser Val Ala
 165 170 175

His	Arg	Asp	Gly	Arg	Leu	Lys	Glu	Thr	Asp	Gln	Ile	Leu	Ala	Ile	Asn	
			180					185					190			
Gly	Gln	Ala	Leu	Asp	Gln	Thr	Ile	Thr	His	Gln	Gln	Ala	Ile	Ser	Ile	
		195					200					205				
Leu	Gln	Lys	Ala	Lys	Asp	Thr	Val	Gln	Leu	Val	Ile	Ala	Arg	Gly	Ser	
	210					215					220					
Leu	Pro	Gln	Leu	Val	Ser	Pro	Ile	Val	Ser	Arg	Ser	Pro	Ser	Ala	Ala	
225					230					235					240	
Ser	Thr	Ile	Ser	Ala	His	Ser	Asn	Pro	Val	His	Trp	Gln	His	Met	Glu	
			245						250					255		
Thr	Ile	Glu	Leu	Val	Asn	Asp	Gly	Ser	Gly	Leu	Gly	Phe	Gly	Ile	Ile	
		260						265					270			
Gly	Gly	Lys	Ala	Thr	Gly	Val	Ile	Val	Lys	Thr	Ile	Leu	Pro	Gly	Gly	
	275						280					285				
Val	Ala	Asp	Gln	His	Gly	Arg	Leu	Cys	Ser	Gly	Asp	His	Ile	Leu	Lys	
	290					295					300					
Ile	Gly	Asp	Thr	Asp	Leu	Ala	Gly	Met	Ser	Ser	Glu	Gln	Val	Ala	Gln	
305					310					315					320	
Val	Leu	Arg	Gln	Cys	Gly	Asn	Arg	Val	Lys	Leu	Met	Ile	Ala	Arg	Ser	
			325						330					335		
Ala	Ile	Glu	Glu	Arg	Thr	Ala	Pro	Thr	Ala	Leu	Gly	Ile	Thr	Leu	Ser	
		340						345					350			
Ser	Ser	Pro	Thr	Ser	Thr	Pro	Glu	Leu	Arg	Val	Asp	Ala	Ser	Thr	Gln	
	355						360					365				
Lys	Gly	Glu	Glu	Ser	Glu	Thr	Phe	Asp	Val	Glu	Leu	Thr	Lys	Asn	Val	
	370					375					380					
Gln	Gly	Leu	Gly	Ile	Thr	Ile	Ala	Gly	Tyr	Ile	Gly	Asp	Lys	Lys	Leu	
385					390					395					400	
Glu	Pro	Ser	Gly	Ile	Phe	Val	Lys	Ser	Ile	Thr	Lys	Ser	Ser	Ala	Val	
			405						410					415		
Glu	His	Asp	Gly	Arg	Ile	Gln	Ile	Gly	Asp	Gln	Ile	Ile	Ala	Val	Asp	
		420						425					430			
Gly	Thr	Asn	Leu	Gln	Gly	Phe	Thr	Asn	Gln	Gln	Ala	Val	Glu	Val	Leu	
	435						440					445				
Arg	His	Thr	Gly	Gln	Thr	Val	Leu	Leu	Thr	Leu	Met	Arg	Arg	Gly	Met	
	450					455					460					
Lys	Gln	Glu	Ala	Glu	Leu	Met	Ser	Arg	Glu	Asp	Val	Thr	Lys	Asp	Ala	
465					470					475					480	
Asp	Leu	Ser	Pro	Val	Asn	Ala	Ser	Ile	Ile	Lys	Glu	Asn	Tyr	Glu	Lys	
			485						490					495		
Asp	Glu	Asp	Phe	Leu	Ser	Ser	Thr	Arg	Asn	Thr	Asn	Ile	Leu	Pro	Thr	
		500						505					510			
Glu	Glu	Glu	Gly	Tyr	Pro	Leu	Leu	Ser	Ala	Glu	Ile	Glu	Glu	Ile	Glu	
	515						520					525				
Asp	Ala	Gln	Lys	Gln	Glu	Ala	Ala	Leu	Leu	Thr	Lys	Trp	Gln	Arg	Ile	
	530					535					540					
Met	Gly	Ile	Asn	Tyr	Glu	Ile	Val	Val	Ala	His	Val	Ser	Lys	Phe	Ser	
545					550					555					560	
Glu	Asn	Ser	Gly	Leu	Gly	Ile	Ser	Leu	Glu	Ala	Thr	Val	Gly	His	His	
			565						570					575		
Phe	Ile	Arg	Ser	Val	Leu	Pro	Glu	Gly	Pro	Val	Gly	His	Ser	Gly	Lys	
		580						585					590			
Leu	Phe	Ser	Gly	Asp	Glu	Leu	Leu	Glu	Val	Asn	Gly	Ile	Thr	Leu	Leu	
	595						600					605				
Gly	Glu	Asn	His	Gln	Asp	Val	Val	Asn	Ile	Leu	Lys	Glu	Leu	Pro	Ile	
	610					615					620					
Glu	Val	Thr	Met	Val	Cys	Cys	Arg	Arg	Thr	Val	Pro	Pro	Thr	Thr	Gln	
625					630					635					640	
Ser	Glu	Leu	Asp	Ser	Leu	Asp	Leu	Cys	Asp	Ile	Glu	Leu	Thr	Glu	Lys	
			645						650					655		
Pro	His	Val	Asp	Leu	Gly	Glu	Phe	Ile	Gly	Ser	Ser	Glu	Pro	Glu	Asp	
			660					665					670			

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ggc atc ata gga gga aaa gca act ggt gtg ata gta aaa acc att ctg Gly Ile Ile Gly Gly Lys Ala Thr Gly Val Ile Val Lys Thr Ile Leu 270 275 280 285	925
cct gga gga gta gct gat cag cat ggg cgt tta tgc agt gga gac cac Pro Gly Gly Val Ala Asp Gln His Gly Arg Leu Cys Ser Gly Asp His 290 295 300	973
att cta aag att ggt gac aca gat cta gca gga atg agc agt gag caa Ile Leu Lys Ile Gly Asp Thr Asp Leu Ala Gly Met Ser Ser Glu Gln 305 310 315	1021
gta gca caa gtc ctt agg caa tgt gga aat aga gtt aag ttg atg att Val Ala Gln Val Leu Arg Gln Cys Gly Asn Arg Val Lys Leu Met Ile 320 325 330	1069
gca aga agt gcc ata gaa gaa cgt aca gca ccc act gct ttg ggc atc Ala Arg Ser Ala Ile Glu Glu Arg Thr Ala Pro Thr Ala Leu Gly Ile 335 340 345	1117
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gag gta ttg cga cat aca gga caa act gtg ctc ctg aca cta atg agg Glu Val Leu Arg His Thr Gly Gln Thr Val Leu Leu Thr Leu Met Arg 450 455 460	1453
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Lys Asp Ala Asp Leu Ser Pro Val Asn Ala Ser Ile Ile Lys Glu Asn	
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Tyr Glu Lys Asp Glu Asp Phe Leu Ser Ser Thr Arg Asn Thr Asn Ile	
495 500 505	
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Leu Pro Thr Glu Glu Glu Gly Tyr Pro Leu Leu Ser Ala Glu Ile Glu	
510 515 520 525	
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Gln Arg Ile Met Gly Ile Asn Tyr Glu Ile Val Val Ala His Val Ser	
545 550 555	
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Lys Phe Ser Glu Asn Ser Gly Leu Gly Ile Ser Leu Glu Ala Thr Val	
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Gly His His Phe Ile Arg Ser Val Leu Pro Glu Gly Pro Val Gly His	
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Leu Pro Ile Glu Val Thr Met Val Cys Cys Arg Arg Thr Val Pro Pro	
625 630 635	
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Thr Thr Gln Ser Glu Leu Asp Ser Leu Asp Leu Cys Asp Ile Glu Leu	
640 645 650	
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Thr Glu Lys Pro His Val Asp Leu Gly Glu Phe Ile Gly Ser Ser Glu	
655 660 665	
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Pro Glu Asp Pro Val Leu Ala Met Thr Asp Ala Gly Gln Ser Thr Glu	
670 675 680 685	
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Glu Val Gln Ala Pro Leu Ala Met Trp Glu Ala Gly Ile Gln His Ile	
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gct tct ggc ttt act ata aat gac tac aca cct gca aat gct att gaa Ala Ser Gly Phe Thr Ile Asn Asp Tyr Thr Pro Ala Asn Ala Ile Glu 930 935 940	2893
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Pro Ser Glu Val Ile Ser Ser Ala Glu Leu Pro Ser Val Leu Pro Asp	
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Cys Asn Ala Glu Cys Val Met Leu Gln Asn Val Ser Lys Glu Ser Phe	
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His Gly Gly Ala Ile Ser Arg Asp Gly Arg Ile Ala Ile Gly Asp Cys	
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Ile Leu Ser Ile Asn Glu Glu Ser Thr Ile Ser Val Thr Asn Ala Gln	
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Met Arg Gly Ile Phe Ile Lys His Val Leu Glu Asp Arg Pro Ala Gly	
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gcc acg gat gga cga ctc aaa gtc gga gat cag ata ctg gct gta gat Ala Thr Asp Gly Arg Leu Lys Val Gly Asp Gln Ile Leu Ala Val Asp 1520 1525 1530	4669
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gga att gca gat ccc gat gga aga ctg atc cag gga gac cag ata tta Gly Ile Ala Asp Pro Asp Gly Arg Leu Ile Gln Gly Asp Gln Ile Leu 1760 1765 1770	5389
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Met Leu Glu Ala Ile Asp Lys Asn Arg Ala Leu His Ala	
1 5 10	
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Ala Glu Arg Leu Gln Thr Lys Leu Arg Glu Arg Gly Asp Val Ala Asn	
15 20 25	
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Glu Asp Lys Leu Ser Leu Leu Lys Ser Val Leu Gln Ser Pro Leu Phe	
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Ser Gln Ile Leu Ser Leu Gln Thr Ser Val Gln Gln Leu Lys Asp Gln	
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Val Asn Ile Ala Thr Ser Ala Thr Ser Asn Ile Glu Tyr Ala His Val	
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Pro His Leu Ser Pro Ala Val Ile Pro Thr Leu Gln Asn Glu Ser Phe	
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Leu Leu Ser Pro Asn Asn Gly Asn Leu Glu Ala Leu Thr Gly Pro Gly	
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Ile Pro His Ile Asn Gly Lys Pro Ala Cys Asp Glu Phe Asp Gln Leu	
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Ile Lys Asn Met Ala Gln Gly Arg His Val Glu Val Phe Glu Leu Leu	
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Lys Pro Pro Ser Gly Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser	
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Ser Val Ala His Arg Asp Gly Arg Leu Lys Glu Thr Asp Gln Ile Leu	
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Ile Ser Ile Leu Gln Lys Ala Lys Asp Thr Val Gln Leu Val Ile Ala	
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225 230 235	

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Tyr Glu Lys Asp Glu Asp Phe Leu Ser Ser Thr Arg Asn Thr Asn Ile	
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Leu Pro Ile Glu Val Thr Met Val Cys Cys Arg Arg Thr Val Pro Pro	
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Thr Thr Gln Ser Glu Leu Asp Ser Leu Asp Leu Cys Asp Ile Glu Leu	
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Pro Glu Asp Pro Val Leu Ala Met Thr Asp Ala Gly Gln Ser Thr Glu	
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Glu Val Gln Ala Pro Leu Ala Met Trp Glu Ala Gly Ile Gln His Ile	
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Met Leu Glu Lys Gly Ser Lys Gly Leu Gly Phe Ser Ile Leu Asp Tyr	
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aca aat gat gct gac tta gta gat gaa tcc aca ttt gag tct cca tac Thr Asn Asp Ala Asp Leu Val Asp Glu Ser Thr Phe Glu Ser Pro Tyr 830 835 840 845	2605
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975 980 985	
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Cys Asn Ala Glu Cys Val Met Leu Gln Asn Val Ser Lys Glu Ser Phe	
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 ctggttagta taaagaaaga taattctaaa gctaaccaaa gaaaatggct tcagtaagtt 6567
 aggatgaaaa atgaaaatat aaaataaaga agaaaatctc ggggagttta aaaaaaatgc 6627
 ctcaatttgg caatctacct cctctcccca ccccaaact 6666

<210> 88
 <211> 763
 <212> PRT
 <213> Homo sapiens

<400> 88
 Met Gly Ser Asn His Thr Gln Ser Ser Ala Ser Lys Ile Ser Gln Asp
 1 5 10 15
 Val Asp Lys Glu Asp Glu Phe Gly Tyr Ser Trp Lys Asn Ile Arg Glu
 20 25 30
 Arg Tyr Gly Thr Leu Thr Gly Glu Leu His Met Ile Glu Leu Glu Lys
 35 40 45
 Gly His Ser Gly Leu Gly Leu Ser Leu Ala Gly Asn Lys Asp Arg Ser
 50 55 60
 Arg Met Ser Val Phe Ile Val Gly Ile Asp Pro Asn Gly Ala Ala Gly
 65 70 75 80
 Lys Asp Gly Arg Leu Gln Ile Ala Asp Glu Leu Leu Glu Ile Asn Gly
 85 90 95
 Gln Ile Leu Tyr Gly Arg Ser His Gln Asn Ala Ser Ser Ile Ile Lys
 100 105 110
 Cys Ala Pro Ser Lys Val Lys Ile Ile Phe Ile Arg Asn Lys Asp Ala
 115 120 125
 Val Asn Gln Met Ala Val Cys Pro Gly Asn Ala Val Glu Pro Leu Pro
 130 135 140
 Ser Asn Ser Glu Asn Leu Gln Asn Lys Glu Pro Glu Pro Thr Val Thr
 145 150 155 160
 Thr Ser Asp Ala Ala Val Asp Leu Ser Ser Phe Lys Asn Val Gln His
 165 170 175
 Leu Glu Leu Pro Lys Asp Gln Gly Gly Leu Gly Ile Ala Ile Ser Glu
 180 185 190
 Glu Asp Thr Leu Ser Gly Val Ile Lys Ser Leu Thr Glu His Gly
 195 200 205
 Val Ala Ala Thr Asp Gly Arg Leu Lys Val Gly Asp Gln Ile Leu Ala
 210 215 220
 Val Asp Asp Glu Ile Val Val Gly Tyr Pro Ile Glu Lys Phe Ile Ser
 225 230 235 240
 Leu Leu Lys Thr Ala Lys Met Thr Val Lys Leu Thr Ile His Ala Glu
 245 250 255
 Asn Pro Asp Ser Gln Ala Val Pro Ser Ala Ala Gly Ala Ala Ser Gly
 260 265 270
 Glu Lys Lys Asn Ser Ser Gln Ser Leu Met Val Pro Gln Ser Gly Ser
 275 280 285
 Pro Glu Pro Glu Ser Ile Arg Asn Thr Ser Arg Ser Ser Thr Pro Ala
 290 295 300
 Ile Phe Ala Ser Asp Pro Ala Thr Cys Pro Ile Ile Pro Gly Cys Glu
 305 310 315 320
 Thr Thr Ile Glu Ile Ser Lys Gly Arg Thr Gly Leu Gly Leu Ser Ile
 325 330 335
 Val Gly Gly Ser Asp Thr Leu Leu Gly Ala Phe Ile Ile His Glu Val
 340 345 350
 Tyr Glu Glu Gly Ala Ala Cys Lys Asp Gly Arg Leu Trp Ala Gly Asp
 355 360 365
 Gln Ile Leu Glu Val Asn Gly Ile Asp Leu Arg Lys Ala Thr His Asp
 370 375 380
 Glu Ala Ile Asn Val Leu Arg Gln Thr Pro Gln Arg Val Arg Leu Thr
 385 390 395 400
 Leu Tyr Arg Asp Glu Ala Pro Tyr Lys Glu Glu Glu Val Cys Asp Thr
 405 410 415
 Leu Thr Ile Glu Leu Gln Lys Lys Pro Gly Lys Gly Leu Gly Leu Ser
 420 425 430
 Ile Val Gly Lys Arg Asn Asp Thr Gly Val Phe Val Ser Asp Ile Val
 435 440 445

Lys Gly Gly Ile Ala Asp Pro Asp Gly Arg Leu Ile Gln Gly Asp Gln
 450 455 460
 Ile Leu Leu Val Asn Gly Glu Asp Val Arg Asn Ala Ser Gln Glu Ala
 465 470 475 480
 Val Ala Ala Leu Leu Lys Cys Ser Leu Gly Thr Val Thr Leu Glu Val
 485 490 495
 Gly Arg Ile Lys Ala Gly Pro Phe His Ser Glu Arg Arg Pro Ser Gln
 500 505 510
 Thr Ser Gln Val Ser Glu Gly Ser Leu Ser Ser Phe Thr Phe Pro Leu
 515 520 525
 Ser Gly Ser Ser Thr Ser Glu Ser Leu Glu Ser Ser Ser Lys Lys Asn
 530 535 540
 Ala Leu Ala Ser Glu Ile Gln Gly Leu Arg Thr Val Glu Met Lys Lys
 545 550 555 560
 Gly Pro Thr Asp Ser Leu Gly Ile Ser Ile Ala Gly Gly Val Gly Ser
 565 570 575
 Pro Leu Gly Asp Val Pro Ile Phe Ile Ala Met Met His Pro Thr Gly
 580 585 590
 Val Ala Ala Gln Thr Gln Lys Leu Arg Val Gly Asp Arg Ile Val Thr
 595 600 605
 Ile Cys Gly Thr Ser Thr Glu Gly Met Thr His Thr Gln Ala Val Asn
 610 615 620
 Leu Leu Lys Asn Ala Ser Gly Ser Ile Glu Met Gln Val Val Ala Gly
 625 630 635 640
 Gly Asp Val Ser Val Val Thr Gly His His Gln Glu Pro Ala Ser Ser
 645 650 655
 Ser Leu Ser Phe Thr Gly Leu Thr Ser Thr Ser Ile Phe Gln Asp Asp
 660 665 670
 Leu Gly Pro Pro Gln Cys Lys Ser Ile Thr Leu Glu Arg Gly Pro Asp
 675 680 685
 Gly Leu Gly Phe Ser Ile Val Gly Gly Tyr Gly Ser Pro His Gly Asp
 690 695 700
 Leu Pro Ile Tyr Val Lys Thr Val Phe Ala Lys Gly Ala Ala Ser Glu
 705 710 715 720
 Asp Gly Arg Leu Lys Arg Gly Asp Gln Ile Ile Ala Val Asn Gly Gln
 725 730 735
 Ser Leu Glu Gly Val Thr His Glu Glu Ala Val Ala Ile Leu Lys Arg
 740 745 750
 Thr Lys Gly Thr Val Thr Leu Met Val Leu Ser
 755 760

<210> 89
 <211> 590
 <212> PRT
 <213> Homo sapiens

<400> 89
 Ile Thr His Gln Gln Ala Ile Ser Ile Leu Gln Lys Ala Lys Asp Thr
 1 5 10 15
 Val Gln Leu Val Ile Ala Arg Gly Ser Leu Pro Gln Leu Val Ser Pro
 20 25 30
 Ile Val Ser Arg Ser Pro Ser Ala Ala Ser Thr Ile Ser Ala His Ser
 35 40 45
 Asn Pro Val His Trp Gln His Met Glu Thr Ile Glu Leu Val Asn Asp
 50 55 60
 Gly Ser Gly Leu Gly Phe Gly Ile Ile Gly Gly Lys Ala Thr Gly Val
 65 70 75 80
 Ile Val Lys Thr Ile Leu Pro Gly Gly Val Ala Asp Gln His Gly Arg
 85 90 95
 Leu Cys Ser Gly Asp His Ile Leu Lys Ile Gly Asp Thr Asp Leu Ala
 100 105 110

Gly	Met	Ser	Ser	Glu	Gln	Val	Ala	Gln	Val	Leu	Arg	Gln	Cys	Gly	Asn
		115					120					125			
Arg	Val	Lys	Leu	Met	Ile	Ala	Arg	Ser	Ala	Ile	Glu	Glu	Arg	Thr	Ala
	130					135					140				
Pro	Thr	Ala	Leu	Gly	Ile	Thr	Leu	Ser	Ser	Ser	Pro	Thr	Ser	Thr	Pro
145					150					155					160
Glu	Leu	Arg	Val	Asp	Ala	Ser	Thr	Gln	Lys	Gly	Glu	Glu	Ser	Glu	Thr
				165					170					175	
Phe	Asp	Val	Glu	Leu	Thr	Lys	Asn	Val	Gln	Gly	Leu	Gly	Ile	Thr	Ile
		180						185					190		
Ala	Gly	Tyr	Ile	Gly	Asp	Lys	Lys	Leu	Glu	Pro	Ser	Gly	Ile	Phe	Val
	195						200					205			
Lys	Ser	Ile	Thr	Lys	Ser	Ser	Ala	Val	Glu	His	Asp	Gly	Arg	Ile	Gln
	210					215					220				
Ile	Gly	Asp	Gln	Ile	Ile	Ala	Val	Asp	Gly	Thr	Asn	Leu	Gln	Gly	Phe
225					230					235					240
Thr	Asn	Gln	Gln	Ala	Val	Glu	Val	Leu	Arg	His	Thr	Gly	Gln	Thr	Val
				245					250					255	
Leu	Leu	Thr	Leu	Met	Arg	Arg	Gly	Met	Lys	Gln	Glu	Ala	Glu	Leu	Met
			260					265					270		
Ser	Arg	Glu	Asp	Val	Thr	Lys	Asp	Ala	Asp	Leu	Ser	Pro	Val	Asn	Ala
		275					280					285			
Ser	Ile	Ile	Lys	Glu	Asn	Tyr	Glu	Lys	Asp	Glu	Asp	Phe	Leu	Ser	Ser
	290					295				300					
Thr	Arg	Asn	Thr	Asn	Ile	Leu	Pro	Thr	Glu	Glu	Gly	Tyr	Pro	Leu	
305					310					315					320
Leu	Ser	Ala	Glu	Ile	Glu	Glu	Ile	Glu	Asp	Ala	Gln	Lys	Gln	Glu	Ala
				325					330					335	
Ala	Leu	Leu	Thr	Lys	Trp	Gln	Arg	Ile	Met	Gly	Ile	Asn	Tyr	Glu	Ile
			340					345					350		
Val	Val	Ala	His	Val	Ser	Lys	Phe	Ser	Glu	Asn	Ser	Gly	Leu	Gly	Ile
		355					360					365			
Ser	Leu	Glu	Ala	Thr	Val	Gly	His	His	Phe	Ile	Arg	Ser	Val	Leu	Pro
		370				375					380				
Glu	Gly	Pro	Val	Gly	His	Ser	Gly	Lys	Leu	Phe	Ser	Gly	Asp	Glu	Leu
385					390					395					400
Leu	Glu	Val	Asn	Gly	Ile	Thr	Leu	Leu	Gly	Glu	Asn	His	Gln	Asp	Val
				405					410					415	
Val	Asn	Ile	Leu	Lys	Glu	Leu	Pro	Ile	Glu	Val	Thr	Met	Val	Cys	Cys
			420					425					430		
Arg	Arg	Thr	Val	Pro	Pro	Thr	Thr	Gln	Ser	Glu	Leu	Asp	Ser	Leu	Asp
		435					440					445			
Leu	Cys	Asp	Ile	Glu	Leu	Thr	Glu	Lys	Pro	His	Val	Asp	Leu	Gly	Glu
		450				455					460				
Phe	Ile	Gly	Ser	Ser	Glu	Pro	Glu	Asp	Pro	Val	Leu	Ala	Met	Thr	Asp
465					470					475					480
Ala	Gly	Gln	Ser	Thr	Glu	Glu	Val	Gln	Ala	Pro	Leu	Ala	Met	Trp	Glu
				485					490					495	
Ala	Gly	Ile	Gln	His	Ile	Met	Leu	Glu	Lys	Gly	Ser	Lys	Gly	Leu	Gly
			500					505					510		
Phe	Ser	Ile	Leu	Asp	Tyr	Gln	Asp	Pro	Ile	Asp	Pro	Ala	Ser	Thr	Val
		515					520					525			
Ile	Ile	Ile	Arg	Ser	Leu	Val	Pro	Gly	Gly	Ile	Ala	Glu	Lys	Asp	Gly
	530					535					540				
Arg	Leu	Leu	Pro	Gly	Asp	Arg	Leu	Met	Phe	Val	Asn	Asp	Val	Asn	Leu
545					550					555					560
Glu	Asn	Ser	Ser	Leu	Glu	Glu	Ala	Val	Glu	Ala	Leu	Lys	Gly	Ala	Pro
				565					570					575	
Ser	Gly	Thr	Val	Arg	Ile	Gly	Val	Ala	Lys	Pro	Leu	Pro	Leu		
			580					585					590		

<210> 90
 <211> 235
 <212> PRT
 <213> Homo sapiens

<400> 90
 Met Leu Glu Ala Ile Asp Lys Asn Arg Ala Leu His Ala Ala Glu Arg
 1 5 10 15
 Leu Gln Thr Lys Leu Arg Glu Arg Gly Asp Val Ala Asn Glu Asp Lys
 20 25 30
 Leu Ser Leu Leu Lys Ser Val Leu Gln Ser Pro Leu Phe Ser Gln Ile
 35 40 45
 Leu Ser Leu Gln Thr Ser Val Gln Gln Leu Lys Asp Gln Val Asn Ile
 50 55 60
 Ala Thr Ser Ala Thr Ser Asn Ile Glu Tyr Ala His Val Pro His Leu
 65 70 75 80
 Ser Pro Ala Val Ile Pro Thr Leu Gln Asn Glu Ser Phe Leu Leu Ser
 85 90 95
 Pro Asn Asn Gly Asn Leu Glu Ala Leu Thr Gly Pro Gly Ile Pro His
 100 105 110
 Ile Asn Gly Lys Pro Ala Cys Asp Glu Phe Asp Gln Leu Ile Lys Asn
 115 120 125
 Met Ala Gln Gly Arg His Val Glu Val Phe Glu Leu Leu Lys Pro Pro
 130 135 140
 Ser Gly Gly Leu Gly Phe Ser Val Val Gly Leu Arg Ser Glu Asn Arg
 145 150 155 160
 Gly Glu Leu Gly Ile Phe Val Gln Glu Ile Gln Glu Gly Ser Val Ala
 165 170 175
 His Arg Asp Gly Arg Leu Lys Glu Thr Asp Gln Ile Leu Ala Ile Asn
 180 185 190
 Gly Gln Ala Leu Asp Gln Thr Ile Thr His Gln Gln Ala Ile Ser Ile
 195 200 205
 Leu Gln Lys Ala Lys Asp Thr Val Gln Leu Val Ile Ala Arg Gly Ser
 210 215 220
 Leu Pro Gln Leu Val Ser Pro Ile Val Ser Arg
 225 230 235

<210> 91
 <211> 251
 <212> PRT
 <213> Homo sapiens

<400> 91
 Pro Ser Val Leu Pro Asp Ser Ala Gly Lys Gly Ser Glu Tyr Leu Leu
 1 5 10 15
 Glu Gln Ser Ser Leu Ala Cys Asn Ala Glu Cys Val Met Leu Gln Asn
 20 25 30
 Val Ser Lys Glu Ser Phe Glu Arg Thr Ile Asn Ile Ala Lys Gly Asn
 35 40 45
 Ser Ser Leu Gly Met Thr Val Ser Ala Asn Lys Asp Gly Leu Gly Met
 50 55 60
 Ile Val Arg Ser Ile Ile His Gly Gly Ala Ile Ser Arg Asp Gly Arg
 65 70 75 80
 Ile Ala Ile Gly Asp Cys Ile Leu Ser Ile Asn Glu Glu Ser Thr Ile
 85 90 95
 Ser Val Thr Asn Ala Gln Ala Arg Ala Met Leu Arg Arg His Ser Leu
 100 105 110
 Ile Gly Pro Asp Ile Lys Ile Thr Tyr Val Pro Ala Glu His Leu Glu
 115 120 125
 Glu Phe Lys Ile Ser Leu Gly Gln Gln Ser Gly Arg Val Met Ala Leu
 130 135 140

Asp	Ile	Phe	Ser	Ser	Tyr	Thr	Gly	Arg	Asp	Ile	Pro	Glu	Leu	Pro	Glu
145					150				155						160
Arg	Glu	Glu	Gly	Glu	Gly	Glu	Glu	Ser	Glu	Leu	Gln	Asn	Thr	Ala	Tyr
			165						170						175
Ser	Asn	Trp	Asn	Gln	Pro	Arg	Arg	Val	Glu	Leu	Trp	Arg	Glu	Pro	Ser
			180					185					190		
Lys	Ser	Leu	Gly	Ile	Ser	Ile	Val	Gly	Gly	Arg	Gly	Met	Gly	Ser	Arg
		195					200					205			
Leu	Ser	Asn	Gly	Glu	Val	Met	Arg	Gly	Ile	Phe	Ile	Lys	His	Val	Leu
	210					215					220				
Glu	Asp	Ser	Pro	Ala	Gly	Lys	Asn	Gly	Thr	Leu	Lys	Pro	Gly	Asp	Arg
225					230					235					240
Ile	Val	Glu	Ala	Pro	Ser	Gln	Ser	Glu	Ser	Glu					
				245					250						

<210> 92
 <211> 272
 <212> PRT
 <213> Homo sapiens

<400> 92															
Pro	Ser	Val	Leu	Pro	Asp	Ser	Ala	Gly	Lys	Gly	Ser	Glu	Tyr	Leu	Leu
1				5					10					15	
Glu	Gln	Ser	Ser	Leu	Ala	Cys	Asn	Ala	Glu	Cys	Val	Met	Leu	Gln	Asn
			20					25					30		
Val	Ser	Lys	Glu	Ser	Phe	Glu	Arg	Thr	Ile	Asn	Ile	Ala	Lys	Gly	Asn
		35					40					45			
Ser	Ser	Leu	Gly	Met	Thr	Val	Ser	Ala	Asn	Lys	Asp	Gly	Leu	Gly	Met
	50					55					60				
Ile	Val	Arg	Ser	Ile	Ile	His	Gly	Gly	Ala	Ile	Ser	Arg	Asp	Gly	Arg
65					70					75					80
Ile	Ala	Ile	Gly	Asp	Cys	Ile	Leu	Ser	Ile	Asn	Glu	Glu	Ser	Thr	Ile
			85						90					95	
Ser	Val	Thr	Asn	Ala	Gln	Ala	Arg	Ala	Met	Leu	Arg	Arg	His	Ser	Leu
			100					105					110		
Ile	Gly	Pro	Asp	Ile	Lys	Ile	Thr	Tyr	Val	Pro	Ala	Glu	His	Leu	Glu
		115					120					125			
Glu	Phe	Lys	Ile	Ser	Leu	Gly	Gln	Gln	Ser	Gly	Arg	Val	Met	Ala	Leu
	130					135					140				
Asp	Ile	Phe	Ser	Ser	Tyr	Thr	Gly	Arg	Asp	Ile	Pro	Glu	Leu	Pro	Glu
145					150				155						160
Arg	Glu	Glu	Gly	Glu	Gly	Glu	Glu	Ser	Glu	Leu	Gln	Asn	Thr	Ala	Tyr
			165						170						175
Ser	Asn	Trp	Asn	Gln	Pro	Arg	Arg	Val	Glu	Leu	Trp	Arg	Glu	Pro	Ser
			180					185					190		
Lys	Ser	Leu	Gly	Ile	Ser	Ile	Val	Gly	Gly	Arg	Gly	Met	Gly	Ser	Arg
		195					200					205			
Leu	Ser	Asn	Gly	Glu	Val	Met	Arg	Gly	Ile	Phe	Ile	Lys	His	Val	Leu
	210					215					220				
Glu	Asp	Ser	Pro	Ala	Gly	Lys	Asn	Gly	Thr	Leu	Lys	Pro	Gly	Asp	Arg
225					230					235					240
Ile	Val	Glu	Val	Asp	Gly	Met	Asp	Leu	Arg	Asp	Ala	Ser	His	Glu	Gln
			245						250					255	
Ala	Val	Glu	Ala	Ile	Arg	Lys	Ala	Gly	Asn	Pro	Val	Val	Phe	Met	Val
			260					265						270	

<210> 93
 <211> 321
 <212> PRT
 <213> Homo sapiens

<400> 93

[illegible]